



AST

COMPUTER

User Guide

Premmia
GX Series





Disclaimer

Although this guide has been carefully checked for accuracy, there may have been changes to the design and specification of the computer since the guide was printed. There are no warranties as to the accuracy of the information in this guide, and AST Computer cannot be responsible for any inaccuracies or omissions.

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As an ENERGY STAR® Partner,
AST Computer has determined that this
product meets the ENERGY STAR®
guidelines for energy efficiency.



Important Safety Instructions

For your protection and safety, please read these instructions thoroughly and pay strict attention to and follow all warnings and instructions.

1. Before cleaning the computer and monitor, be sure to disconnect them from AC power. Do not use any liquid or spray cleaners - wipe with a damp cloth only.
2. Do not use the computer if the environment you are working in is wet or overly damp.
3. The computer can only be operated within the voltage range specified on the power rating label. For information on the voltage range in your area, contact your electrical utility company.
4. The AC power cable should only be used to connect your computer to an electrical power supply. Make sure the outlet is easily accessible.
5. Unplug the computer from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power cord is damaged.
 - B. If liquid has entered the computer.
 - C. If the computer does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and often requires extensive work by a qualified technician to restore the computer to normal operation.
 - D. If the computer has been dropped or damaged.
 - E. If the computer exhibits a distinct change in performance.
6. Do not use CD disks that are not perfectly round or are otherwise unbalanced. Due to the very high rotation speeds inside the CD drives, an unbalanced disk can cause vibration and malfunctions.





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An Overview

Your computer combines high-performance components in a design that meets multiple industry standards and supports most common operating systems (for example Microsoft® Windows 98® and Windows NT®) and applications (for example Microsoft Word or Excel, Internet browsers and email programs).

Getting the most out of your computer requires a good understanding of how the features of the computer work with the operating system and with applications. You should spend a few moments to review this user guide to get an idea of what your computer can do, as well as checking out the operating system and applications manuals to see how they work together.

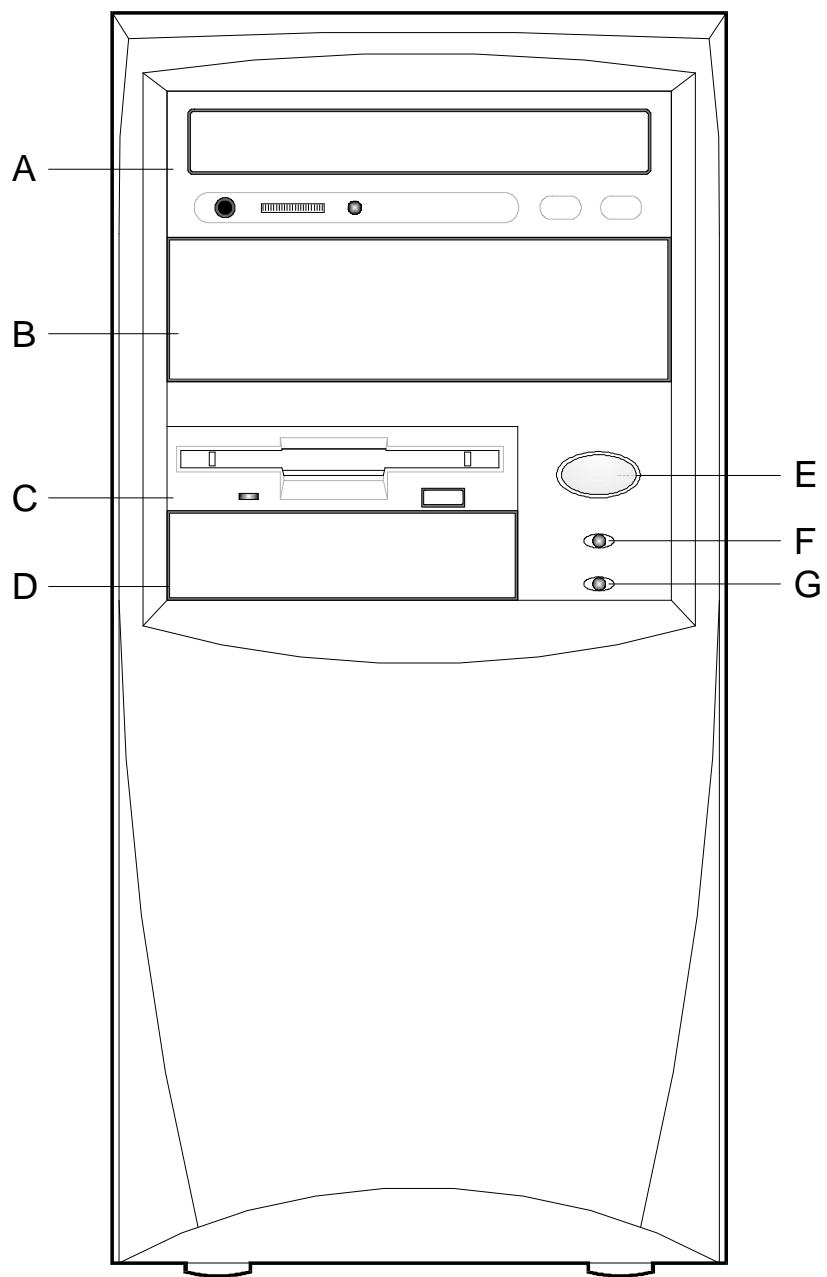
The next few pages gives you a quick tour of the computer; the following sections have a more in-depth description of each feature.





The Front of the Computer{ XE "Diskette drive" }{ XE "CD-ROM drive" }{ XE "Front panel" }{ XE "Drive bays" }{ XE "Zip drive" }{ XE "Hard disk:LED" }{ XE "Device bays" }{ XE "Power LED" }





Premmia GX Series

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A	optical drive	A CD-ROM drive, see page 30 for more details.
B	5.25" device bay	Available for you to install additional devices; see page 43 for more details.
C	3.5" diskette drive	A standard 1.44MB diskette drive; see page 28 for more details.
D	3.5" device bay	If you ordered a Zip™ drive with your computer, it will be installed here; see page 34 for more details on using a Zip drive. See page 43 for details on installing a drive here.
E	Power button	Use this to turn the computer on, turn it off, and put it into power-saving Suspend mode: see page 18 for more details.
F	Power LED	Lights when the computer is turned on.
G	Hard drive LED	Lights when the hard disk is being accessed, do not turn off or reset the computer when this is lit.

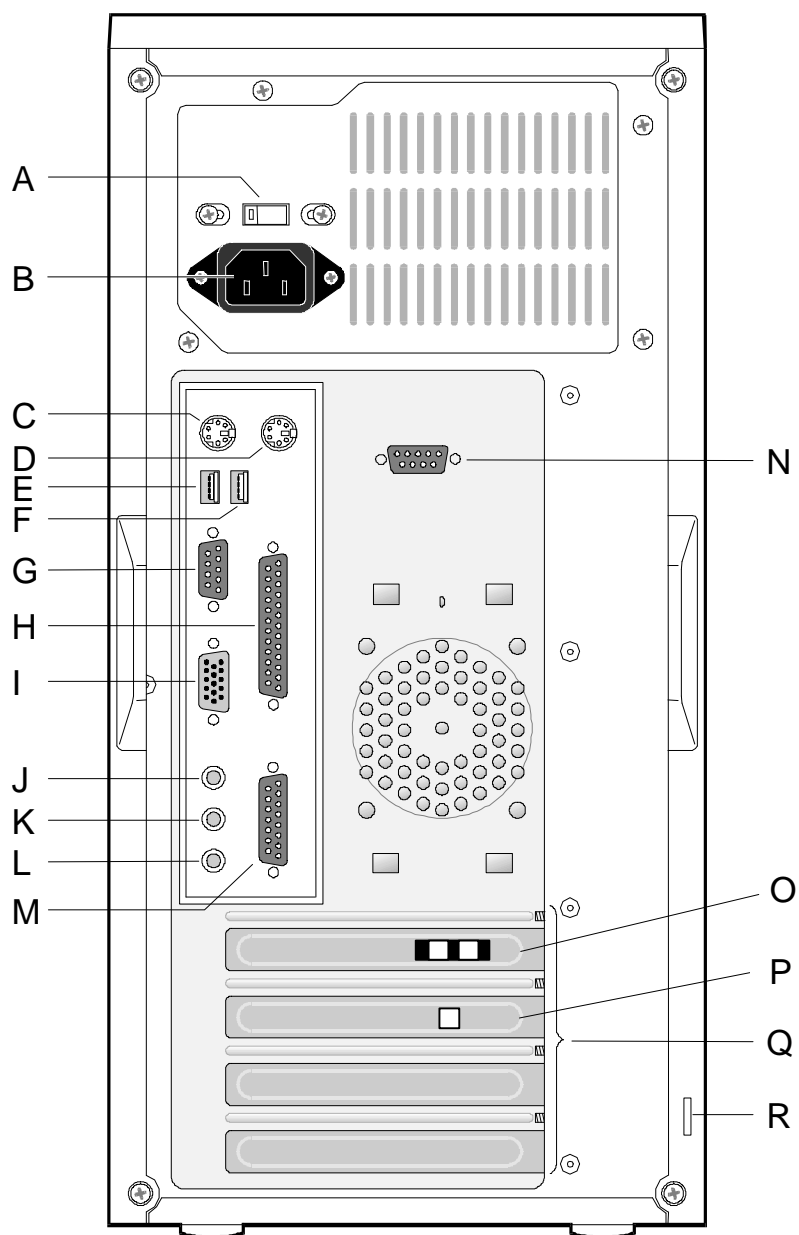




The Back of the Computer

{ XE "AC voltage switch" } { XE "AC connector" } { XE "PS/2 port" } { XE "Mouse port" } { XE "Keyboard port" } { XE "USB ports" } { XE "Serial ports" } { XE "Parallel port" } { XE "Printer port" } { XE "Video port" } { XE "Graphics port" } { XE "Game port" } { XE "Audio ports" } { XE "Microphone port" } { XE "Speaker port" } { XE "Option cards" } { XE "MIDI port" } { XE "Padlock" } { XE "Security:Padlock" } { XE "MIDI port" } { XE "ISA cards" } { XE "PCI cards" }





A	AC voltage selection switch	Use this to set up the computer to accept 110V or 220V AC power; you should not need to change this, but if you do, refer to page 19 for more details.
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		to page 18 for more details.
B	AC power inlet	Connect the AC cable here.
C	Keyboard port	Connect the keyboard here; see page 28 for more details.
D	Mouse port	Connect the mouse here; see page 28 for more details.
E F	USB ports	Connect USB devices here; see page 34 for more details.
G	Serial port 1	Connect serial devices here; see page 34 for more details.
H	Parallel port	Connect parallel devices, such as a printer here; see page 31 for more details.
I	Monitor connector	Connect your monitor here; see page 34 for more details.
J	Audio input	Connect external audio sources, such as a radio or VCR here; see page 27 for more details.
K	Audio output	Connect your speakers here; see page 27 for more details.
L	Microphone input	Connect an external microphone here; see page 27 for more details.
M	MIDI/Game port	This port can be used to connect a joystick/gaming device or a MIDI audio device; see page 29 for more details.
N	Serial port 2	Connect serial devices here; see page 34 for more details.
O	Modem card	This optional card is used to connect to a telephone line; see page 29 for more details.
P	Network card	This optional card is used to connect to a local area network; see page 30 for more details.
Q	Expansion slots	Used to add option cards; see page 51 for details.
R	Padlock loop	Use this to prevent access inside your computer; see page 32 for details.





Ergonomic Considerations{ XE "Ergonomics" }{ XE "Carpal Tunnel Syndrome" }

Any physical activity, repeated frequently over a long period of time, may pose a risk of serious injury. Some nerve, tendon and muscle disorders may be associated with repetitive activities, improper work environments and incorrect work habits. Although some studies have shown an association between long-term use of a keyboard and the development of nerve, tendon and muscle disorders such as Carpal Tunnel Syndrome, it is still unclear whether working at a computer causes these disorders.

We've designed your computer to be as easy to use as possible, but please follow the guidelines in this section to reduce the risk of injury.

If you do experience pain, tenderness, swelling, burning, cramping, throbbing, weakness, soreness, tingling and/or numbness anywhere in your body, please contact a doctor. If you do have to work on your computer for long periods of time, make sure you vary your tasks throughout the day, and take frequent breaks - get up and stretch, walk around.

Arrange Your Work Environment

Arrange your work environment so that you are working in an easy and relaxed position.

Get Seated

Adjust your chair according to the following guidelines:

- Keep your body in a relaxed, upright position; make sure the back of your chair supports the inward curve of your back.
- Use the entire seat and backrest to support your body. The angle between your back and thighs should be 90° or greater.
- Place your feet flat against the floor. Extend your lower legs slightly so that the angle between your upper and lower legs is greater than 90°.





Typing

When you use the keyboard, follow these guidelines:

- Adjust your seat height so that your elbows are near to your body and your forearms are parallel to the floor. If your chair has armrests, try and use these to support your arms.
- Type with your wrists straight and your hands floating above the keyboard. Lower your wrists only between typing to rest them.
- Try to avoid bending your wrists, hands or fingers sideways; if you have to press a hard-to-reach key, move your entire arm.
- Keep your shoulders, arms, wrists and hands relaxed. Type gently; don't bang the keys.

Viewing the Screen

Use the following guidelines to reduce eye, shoulder and neck stress:

- Position the screen so that it is at 90° to windows, ceiling lights or other light sources.
- Adjust the screen brightness and contrast to enhance readability.
- Set up the screen resolution and icon and font sizes so that you can read things easily.
- Clean the screen regularly.
- Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often.



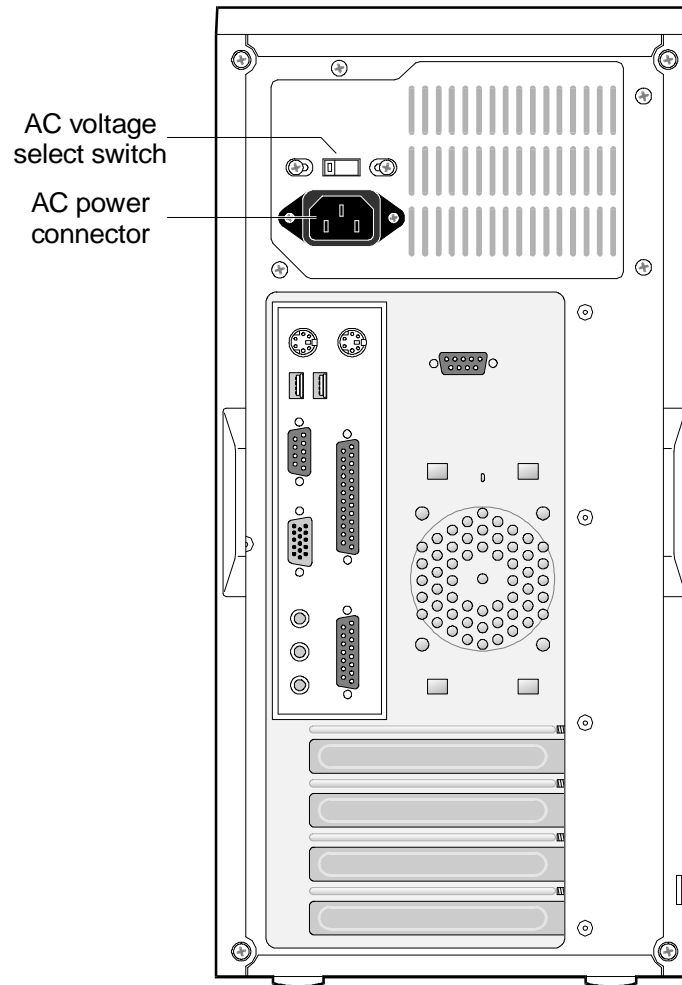


Turning the Computer On and Off{ XE "Turning on the computer" }{ XE "AC voltage switch" }{ XE "AC connector" }

Powering the Computer

On the back of your computer, just above the AC power connector, is the AC voltage selection switch. The switch has two settings, depending on the AC supply: 115 VAC (from 100 to 127 VAC) and 230 VAC (from 200 to 240 VAC). Check with your utility company for the correct range.





Turning On the Computer

The back of your computer has a lot of ports that you can use to connect external devices such as the keyboard and mouse, printers, scanners and so on. However, the only ports to which you can connect external devices when the computer is turned on are the two USB ports. Devices that use other ports must be connected before you turn on the computer; if you connect external devices to the computer when it is turned on, you risk damaging both the computer and the device.



You should also turn on external devices before you turn on the computer.

There are two ways to turn on the computer: manually, by pressing the power button on the front panel and remotely, using an optional network card or modem card.

When the computer is turned on, the green power light on the front panel lights and the computer runs a series of Power-On Self Tests (POST) to make sure everything is OK. After that the operating system is started.{ XE "Power LED" }

Using the Network to Turn On the Computer{ XE "Wake on LAN" }{ XE "Network" }{ XE "LAN:Remote boot" }

Your computer supports the Wake On LAN standard that allows a network administrator to start your computer remotely by sending a signal over the network to which your computer is connected. To use Wake on LAN:

- the installed network interface card must support Wake on LAN,
- the card must be connected to the Wake On LAN connector on the motherboard (see page 39 for more details),
- *Power On From LAN* in the *Power Management* menu of Setup must be enabled (see page 68 for more details).

If you ordered your computer with the LAN card, it will have been set up to support Wake on LAN.





Using the Modem to Turn On the Computer{ XE "Wake on ring" }{ XE "Modem:Remote boot" }

Your computer supports the Wake On Ring standard that starts your computer when an installed modem receives a phone call. To use Wake on Ring:

- install a modem option card that supports Wake on Ring,
- the card must be connected to the Wake On Ring connector on the motherboard (see page 39 for more details),
- *Power On From Ring* in the *Power Management* menu of Setup must be enabled (see page 68 for more details).

If you ordered your computer with the modem, it does not support Wake on Ring.





Turning Off the Computer

There are several ways that you can shut down the computer:

- use power management to put the computer into a low-power mode
- restart the computer
- shut down Windows
- turn off the computer manually.

Using Power Management

When the computer returns from a low-power mode, Windows and your programs should be exactly the same as they were when you entered the mode.

You can put the computer into a low-power mode using a Windows utility or by pressing the Power button; you can also set up the computer to go into a low power mode automatically if it has not been used for a period of time. Power management is described in detail on page 24.

Restarting the Computer{ XE "Restarting the computer" }{ XE "Resetting the computer" }

Restarting the computer reloads the operating system then you'll have to start the applications you want to use again.

To restart Windows, click the *Start* button in Windows, select *Shut Down...*, then select *Restart* and click *OK*. Windows closes any open applications, then restarts the computer.

It is very important to always try to restart Windows this way, if you don't, you risk damaging the files in use at the time, and you may not be able to start Windows again. If you do restart the computer without using the *Restart* feature in Windows, the next time you turn it on, you'll see some warning messages and Windows will want to start a program called ScanDisk to make sure there's nothing wrong with the hard disk.

However, if Windows or a program you are using seems to have stopped responding, press the **Ctrl**, **Alt** and **Delete** keys at the same time. Windows opens the *Close Program* window (it may take a few minutes to appear) which lists the active programs, and you should be able to close the problem program from here. After that you should be OK, but you should close everything else down normally, then restart the computer using *Shut Down* on the *Start* menu.

If closing programs using the *Close Program* window still does not let you restart the computer, you can press **Ctrl-Alt-Del** two times to restart the computer.





If pressing keys has no effect, you will need to turn off the computer manually.

Shutting Down the Computer{ XE "Shutting down" }{ XE "ScanDisk" }

Shutting down Windows closes all applications that are open, and reminds you to save any unsaved files. Next time you turn on the computer, all of the components in and connected to the computer are reinitialized. Then Windows starts from scratch and you'll have to start the applications you want to use and open the files you want to work on.

To shut down the computer, click the *Start* button in Windows, make sure *Shut Down* is selected, then click *OK*. Windows closes down any open applications, then itself, and finally turns off the computer.

It is very important to always close Windows this way, if you don't, you risk damaging the files in use at the time, and you may not be able to start Windows again. If you do turn the computer off without shutting Windows down in this way, the next time you turn it on, you'll see some warning messages and Windows will want to start a program called ScanDisk to make sure there's nothing wrong with the hard disk.

However, if Windows or a program you are using seems to have stopped responding, press the **Ctrl**, **Alt** and **Delete** keys at the same time. Windows brings up the *Close Program* window (it may take a few minutes to appear). The window lists the active programs, and you should be able to close the problem program from here. After that you should be OK, but we you should close everything else down normally, then shut down the computer using *Shut Down* on the *Start* menu.

If pressing **Ctrl-Alt-Del** has no effect, you'll have to turn off the computer manually.

Turning Off the Computer Manually{ XE "Turning off" }{ XE "Power button" }

If you're using an operating system that doesn't have a Shut Down feature like the one in Windows, you can turn the computer off manually. You can also turn off the computer manually with Windows running, but this is only recommended as a last resort, as you risk damaging files that the operating system needs to run correctly.

To turn the computer off manually, first wait until the hard disk LED on the front panel goes out, then press the Power button above the LED; see page 27 for more details on using the Power button.



Power Management{ XE "Power management" }{ XE "ENERGYSTAR" }{ XE "ACPI" }{ XE "APM" }

Power management in something as complex as a modern computer is also complex. This section gives an overview of the key features.

ENERGY STAR, ACPI and APM

First three important industry standards: ENERGY STAR®, ACPI and APM.



Computer equipment is the fastest-growing electric load in the business world. Unfortunately, much of the energy associated with computers is wasted because they are often kept on while not in use. We have worked with the US government's Environmental Protection Agency to ensure your computer meets the power usage guidelines in their ENERGY STAR® program. ENERGY STAR® computers:

- save you money in electricity bills
- may actually last longer than conventional products because they spend a large portion of time in a low-power Standby mode
- generate less heat than conventional systems
- tend to be quieter than conventional computers.

When you buy any electronic equipment - a printer, monitor, TV or VCR, check that it meets ENERGY STAR® power guidelines.



Your computer complies with the guidelines of the Advanced Configuration and Power Initiative (ACPI), which require that each component in or connected to your computer can be managed by the computer and Windows. This affects both the resources each component needs as well as how it uses power. The power management requirement is that the component stops using power when it isn't being used, but can be ready to work as soon as it's required. For example, the modem should not use power when it's not being used, but as soon as the phone rings, it should pick up the call.

Most of this happens without you doing anything, but it is important that when you use your computer with other devices, such as a modem or a printer, that these devices are also ACPI-compliant; check with the manufacturer or in the user guide.

The Advanced Power Management (APM) specifications are older, less comprehensive requirements for power management; your computer complies with APM 1.2.

The important thing to note about power management is that the components of your computer manage the power they use without needing you to do anything. There is no difference in performance between a computer that manages power and one that isn't, but the power-managed computer will be cooler and use less energy.

Controlling Power Management

Power management in your computer can be controlled by the computer itself or by Windows. If you are using Windows 98, you should let the operating system manage the power, and not use the computer's power management features. The computer's power management is controlled in Setup, where the default setting is to let Windows manage power (see page 68 for more details).

Windows Power Management{ XE "Power management:Windows" }{ XE "Windows power management" }

To access the power management controls within Windows, open *My Computer*, then open the *Control Panel*, then open *Power Management*. The Power Management Properties window that is displayed lets you set time-outs for System standby, the hard drive and the monitor. If the computer is inactive for the time set here, Windows puts the System into standby mode, or tells the hard drive or monitor to go into a low-power mode.

Note that what Windows calls Standby mode is called Suspend mode in the following section.





The Computer's Power Management{ XE "Suspend mode" }{ XE "Doze mode" }{ XE "Standby mode" }

Your computer has three low-power modes that progressively save more power but take more time to return to full-speed operation.

In Doze mode, only the processor slows down; all other devices continue at full speed. The computer enters Doze mode when the processor has been inactive for the time set in Setup (see page 68). You don't have to do anything to wake the computer from Doze mode – as soon as the processor has anything to do, it returns to full-speed operation.

In Standby mode, the processor slows, the hard disk enters a low-power mode and the video signal is shut off; all other devices continue at full speed.. The computer enters Standby mode when the processor has been inactive for the time set in Setup (see page 68). To wake up from Standby mode, move the mouse or use the keyboard; it can take up to 15 seconds for the computer to fully wake up.

In Suspend mode, all devices except the processor are shut off. It takes up to two minutes for the computer to fully wake up. The computer wakes up from Suspend mode when:

- you press a key on the keyboard or move the mouse
- you press the Power button on the front panel; see the following section on using the Power button
- an installed modem receives a phone call; see page 21 for more details
- an installed network card receives a Wake on LAN command; see page 20 for more details
- at a set time and date (see page 68 for more details).

As well as these three modes, you can separately control the power management of the monitor and the hard disk drive.

You can choose how the power used by the monitor is managed: using Setup, you can set the computer to simply stop sending signals to the monitor, or to use the DPMS standard. Check in your monitor's user guide to see which method is best. You also use Setup to determine during which power management mode the monitor power is managed. The Setup choices are described on page 68.{ XE "DPMS" }{ XE "Monitor:Power management" }{ XE "Hard disk:Power management" }

You can also set a separate timeout value for the hard disk.





Using the Power Button { XE "Power button" } { XE "Soft off" } { XE "Suspend mode" }

You can set the Power button on the front panel to work in two ways, controlled by the *Soft_Off* setting in Setup (see page 68).

If *Soft_Off* is set to *Instant Off* (the default setting), the Power button works like a simple on/off switch – pressing it turns the computer off if it's on, and on if it's off.

If *Soft_Off* is set to *Delay_4seconds*, you can also use the Power button to enter and leave Suspend mode. When the computer is on, pressing the Power button for less than 4 seconds puts the computer into Suspend mode; pressing it for more than 4 seconds turns it off.

Using Audio { XE "Audio" } { XE "External speakers" } { XE "Microphone" } { XE "Volume control" }

Your computer has three audio jacks on the back panel (see page 13):

- Audio-In: connects to an external source of audio signals, such as a radio
- Audio-Out: connects to your external speakers
- Microphone-In: you can connect a microphone here.

You control the volume of audio from your computer in several ways: Windows has its own volume control - double-click on the speaker icon in the lower right corner to display it. You'll see that there is a master volume control as well as individual controls for each input device - the CD drive, microphone, etc. There may also be a volume control in the applications you're using - games usually have their own settings for audio volume. The external speakers also have their own volume control. For the best signal and the least background noise, you need to maximize the volume in the application and in Windows, then use the external speaker volume control to set the sound level to an acceptable level.





Using the Diskette Drive{ XE "Diskette drive" }{ XE "Floppy drive" \t "See Diskette drive" }

You can use standard 720KB and 1.44MB diskettes with the 3.5" diskette drive in your computer.

To start (boot) the computer from a diskette, you first need to check on the settings in the *BIOS Features* menu in Setup (see page 64 for more details); this sets the order in which the computer checks disk drives for a bootable disk. If you do not have a diskette in the drive when the computer is turned on, Windows starts normally from the hard disk.

When you start the operating system from diskette or the hard disk, the diskette drive is drive A; if you start the operating system from the CD-ROM drive, the diskette drive becomes drive B.

You can insert and remove diskettes at any time, whether the computer is on or off. To insert a diskette, slide it into the drive shutter end first with the label up until it clicks into place and the eject button sticks out. To remove a diskette, first check that the green light on the front of the drive is not lit, then push the eject button.

Using the Keyboard and Mouse{ XE "Keyboard port" }{ XE "Mouse port" }{ XE "PS/2 port" }

The keyboard and mouse supplied with your computer use the PS/2 ports on the back of the computer to connect to the system; see page 13 for the location of these ports.

Although the two PS/2 ports look identical, you cannot use them interchangeably. Also, you must not connect the keyboard or mouse when the computer is turned on – if you do you risk damaging both the computer and the keyboard or mouse.

Your mouse has a left and right button as well as a central wheel. You can control what each of these do using the *Mouse Properties* panel. In the lower right of your screen, next to the clock, you should see a small picture of a mouse. Double-click on this to open the *Mouse Properties* window, then go through each tab to see what features are available. Use the *Help* button at the bottom of the window for more information.





Using the MIDI/Game Port{ XE "MIDI port" }{ XE "Game port" }{ XE "Joystick" }

There are two ways to connect a joystick to your computer:

- via the USB port: USB joysticks can be connected and disconnected without turning off the computer and are automatically configured.
- via the game port on the back of the computer; see page for the location of the port. If you use this port, the joystick must be connected before the computer is turned on.

The game port can also be used to connect to MIDI devices; after you install and start your MIDI program, the port will automatically switch to MIDI.

Using a Modem{ XE "Modem" }{ XE "Phone line" }{ XE "56k modem" }{ XE "v.90 modem" }{ XE "Fax" }{ XE "COM ports" }

Your computer may have a modem option card installed; if so you'll see that there are two jacks for telephone lines in one of the slots on the back panel of your computer. One of the jacks (LINE) connects to the telephone line, the other (PHONE) can be connected to a telephone so that you can use the line to make calls when the computer is not using it. The modem supports the following:

- data reception using the v.90 standard – you can down-load data at up to 56kbps when connected to an Internet Service Provider (ISP) with compatible equipment. Current US FCC regulations limit data transfer rates to 53kbps due to excessive power demands at higher speeds.
- data modem connections up to 33.6kbps with error correction (v.42/ MNP 2-4) and data compression (v.42bis/ MNP5)
- video phone connections using the v.80 standard
- digital simultaneous voice and data (DSVD) connections over a single telephone line using the v.70 standard
- up to 14.4kbps fax transmission and reception.

With the modem installed, there are three serial devices in your computer: the two serial ports on the back panel and the optional modem. With Setup set to its default values, Windows refers to the two built-in ports as COM1 and COM2, and to the modem as





COM3. You can change this by using Setup to change the addresses and interrupts used by the built-in ports (see page 71 for more details).

To use your modem with your communications program, you just need to tell the program that the modem is on COM3. Some older applications ask for a modem file; in this case, you should get a newer version of the application that uses the Windows settings.

Using a Network Card{ XE "Network card" }{ XE "LAN card" }{ XE "Ethernet card" }

Your computer may have the SMC 10/100BaseT Ethernet network adapter installed; if so, you'll see a single Ethernet 10BaseT (RJ-11) connector in one of the option slots on the back panel, connect the cable from your network here.

Using the CD-ROM Drive{ XE "CD-ROM drive" }

A CD-ROM (Compact Disc, Read Only Memory) disk can store up to 74 minutes of music or 650MB of computer data and is read-only – you cannot change the data on the disk.

When your computer was set up in the factory, the CD-ROM drive is drive D.

To start (boot) the computer from a bootable disk in the CD-ROM drive, you need to check the BIOS Features menu in Setup (see page 64 for more details). When you boot from a CD, it becomes drive A, and the diskette drive B.

To insert a CD-ROM disk, the computer needs to be turned on. Press the load/eject button on the front of the drive and the tray should open. Place the disk in the center of the tray, then press the load/eject button again to close the drive. You will hear the drive start, but wait about 10 seconds before trying to access the disk.

If you insert an audio CD, Windows will automatically detect it and start to play it. If you insert a data CD, depending on how the disk was created, Windows may automatically start the Setup program on the disk; if it doesn't, check with the application user guide for information on installing and using the application.

To remove a disk, the best way is to use Windows as this ensures that any applications using the disk are stopped first. In the *Control Panel*, right-click on the drive icon, then select *Eject*. If the disk is being used by a program, the drawer will not open until the program stops using it.

To remove the disk manually first check that the light on the front of the drive is off, then press the load/eject button on the front of the drive. The disk stops spinning, then the drawer opens. If the disk is being used by a program, the drawer will not open until the program stops using it.





As well as the eject button, the front of the CD-ROM drive contains the following:

- Headphone jack and volume control
- Activity LED: lights when the disk is being used
- Play and fast forward button: when an audio CD is inserted, this button can be used to start the disk playing, and to skip tracks.

Using the Parallel Port{ XE "Printer" }{ XE "Parallel" }{ XE "Scanner" }{ XE "ECP" }{ XE "EPP" }{ XE "Bi-directional" }

The most common use for the parallel port is to connect a printer or a scanner.

Before connecting or disconnecting a parallel port device, make sure the computer is turned off. If you try to connect the device with the computer, you risk damaging both the computer and the device.

There are four modes in which the parallel port can work: standard, bi-directional, extended capabilities port (ECP) and enhanced parallel port (EPP). Older printers use standard (unidirectional) mode, but newer ones support bi-directional and ECP modes. Parallel port scanners can work in bi-directional mode, but are faster in ECP or EPP mode. Most storage devices require bi-directional mode, but can also work in ECP or EPP modes for better performance.

Unfortunately, there are several different implementations of the EPP “standard” so if you cannot get a parallel device to work in EPP mode, check with the manufacturer to make sure you have the latest software.

The default setting of the parallel port in your computer is standard (unidirectional), but you can change the mode through Setup; see page 71 for more details.

Some parallel devices have a pass-through connector, so that you can connect several parallel port devices in a “daisy chain”. If you are planning to do this, connect each device by itself, and make sure it is working correctly before linking them together.





Security{ XE "Security" }{ XE "Padlock" }{ XE "Passwords" }{ XE "Windows password" }

There are several ways in which you can secure your computer and the data on it:

- use the padlock loop on the back of your computer (see page 13) to prevent the system cover from being removed and so restrict access to the components inside
- use the user password features to restrict access to the operating system and Setup
- use a Windows password.

User Password{ XE "System password" }

You can use Setup to set a password that restricts access to Setup and to prevent the operating system starting without the password being entered.

The password can be up to eight characters long. It is case-sensitive, so make sure you note the **Caps Lock** setting before setting a password.

To set a password:

1. Turn on the computer and press **Delete** to enter Setup when prompted.
2. Highlight *User Password* and press **Enter**.
3. Type a password of up to eight characters and press **Enter**.
4. Type the password again and press **Enter**.
5. On the *BIOS Features Setup* screen, set *Security Option* to either *System* or *Setup*.

Follow the same steps to change a password. To delete a user password, follow the same steps, but do not type a new password.





If you set a password, but then forget it, you can clear the password using a jumper on the motherboard.

1. Follow the instructions on page 38 to remove the system cover.
2. Use the drawing on page 39 to identify the Password Clear Jumper (JP2); place a jumper over the two pins.
3. Replace the system cover, reconnect the power cord, then turn on the computer. The password is now cleared
4. Turn off the computer and disconnect the power cord. Remove the system cover.
5. Remove the jumper from the Password Clear Jumper pins.
6. Follow the instructions on page 38 to replace the system cover.

Windows Password

As well as the passwords to restrict access to Setup and to the overall system, you can also set a password to access Windows. Note that this does not prevent access to the computer - anyone can skip the password and still access the data on the hard disk.

However the Windows password does allow you to set up Windows in different ways for different users. And once the password is entered, Windows can then remember any passwords for other programs you then set.

To set a Windows password, use the *Password* utility in the *Control Panel*. To stop Windows prompting you for a password, use the *Password* utility to change to a new password, but do not type a new one.





Using the Serial Ports{ XE "Serial ports" }{ XE "COM1" }

You can connect most serial devices such as mice and modems to the serial ports on the back panel. Serial devices must be connected and disconnected when the computer is turned off in order to work correctly. If you connect the device with the computer turned on, you may damage both the computer and the device.

Once the device is connected and turned on, you'll probably need to run a Setup program, refer to the device's manual for details.

However, the serial port standard is an old, slow one, and you should use the USB devices instead - these are faster, can be connected without turning off the computer and support plug and play so you don't have to reload drivers each time you connect or disconnect a device.

Windows refers to serial devices as COM1, COM2, COM3, etc, and assigns according to the addresses and interrupts of the serial devices. There are two serial ports on the back of your computer (see page 13): Serial Port 1 and 2; the addresses and interrupts of these ports are set in Setup (see page 71). By default, Serial Port 1 is set to COM1 and Serial Port 2 to COM2. If you ordered your computer with a modem installed, this will be COM3.

Using the USB Ports{ XE "USB ports" }{ XE "Universal Serial Bus" \t "See USB" }{ XE "Hubs" }

The Universal Serial Bus (USB) ports give you an easy way to connect accessories. Previously, you had to connect external devices in several different ways - parallel, serial, PS/2, game port - the computer and external device had to be turned off while doing this, and you spent a long time getting everything to work together. With USB, you can connect up to 127 devices to your computer, using cables between each device up to 16 feet (5m) long, each using the same type of connector. The first time you connect a device, you may have to load some software, but after that, the device is configured automatically.

Using the Video Controller{ XE "Video controller" }{ XE "ATi Rage Pro Turbo" }

Your computer features the ATi 3D Rage Pro Turbo with 4MB of SGRAM memory. The controller connects to the computer via an AGP 2.0 video bus. The video controller comes with an application that lets you set up the display as you want it; click on the ATi icon next to the clock for more details.





Using the Zip Drive{ XE "Zip drive" }

If you bought your computer with a Zip drive installed, it will be below the diskette drive in the front panel. A Zip drive allows you to store up to 100MB of data and programs on special Zip 100 cartridges, and then share the information with the millions of other computers with Zip drives installed.

The computer needs to be turned on to insert or remove a Zip 100 cartridge. Insert the Zip 100 cartridge shutter end first with the label up until it clicks into place. After inserting the cartridge the light on the front of the drive flashes as the cartridge is initialized. After the initialization, you can access the cartridge.

The cartridge eject button on the front of the Zip drive houses a light and the emergency manual eject mechanism.

Light	Activity
ON Steady	Power on diagnostics
OFF	No cartridge inserted Cartridge inserted but not spinning Cartridge inserted and spinning, but media not being accessed
Fast Blink	Drive spinning up or down
Irregular Blink	Media being accessed
Slow Blink	Drive or cartridge malfunction

The best way to eject a cartridge is to use Windows, as this ensures that the cartridge is not being used before removing it. In *My Computer*, right-click on the *Zip 100* icon, then select *Eject*.

You can also use the eject button; first check that the light on the front of the drive is not on, then press the button. The cartridge spins down, then it is ejected. If the cartridge is being used, it will not be ejected.

When you shut down Windows, the cartridge is automatically ejected.

If you need to remove a cartridge but cannot turn on the computer, there is an emergency method. First wait for at least one minute after turning off the computer, then insert the a thin stiff wire, like a small, straightened paper clip, into the small hole to the left of the LED indicator on the cartridge eject button. The cartridge should be ejected.





Changing Your Computer

This section covers some of the ways you can change your computer, including:

- adding more memory
- removing and replacing your drives
- installing an option card
- changing the processor
- replacing the RTC battery.

As well as the steps in this section, you should make sure you read any instructions that came with the part you're going to install.

Before You Begin

Before you install any options or expansion cards, read and follow all the cautions and warnings presented in this chapter.

- Before you remove the cover, unplug the power cord from the wall socket and disconnect all cables attached to the computer from the keyboard, mouse, monitor, printer and so on.
- Even when the power switch is off, hazardous voltage and current levels are present inside the computer. Do not operate the computer with the cover removed - always replace the cover before reconnecting the power cord and turning on the system.
- Electrostatic discharge (ESD) can damage disk drives, expansion cards, or other system components. You should use an anti-static wrist strap attached to a ground when working inside the system. Place system components or expansion cards on a conductive foam pad to reduce the risk of electrostatic buildup.
- Disconnect the computer from any telecommunications links, networks, or modems before performing any of the procedures described in this chapter. Failure to disconnect power, telecommunications links, networks, or modems can result in personal injury or equipment damage. Some circuitry on the motherboard can continue to operate even though the front panel power button is off.

WARNING: Failure to disconnect power before removing the cover can result in personal injury and/or equipment damage!



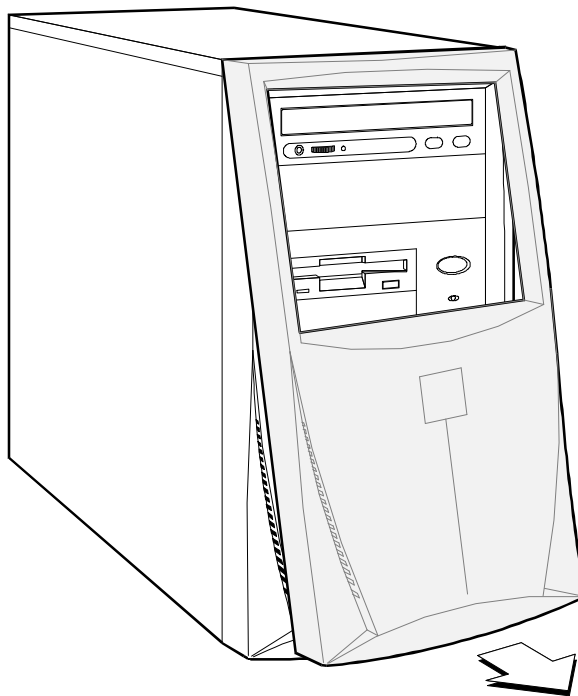


Getting Inside the Computer{ XE "Front bezel" }{ XE "Drive bays" }

If you are going to install devices into the 3.5" or 5.25" drive bays, you need to first remove the front bezel; otherwise you only need to remove the system cover.

Removing the Front Bezel

Grasp the plastic lip at the bottom of the front bezel, then pull out and then up until the front bezel is free.



Replacing the Front Bezel

Align the plastic studs at the top of the bezel with the slots on the unit then press along the face of the front bezel until the studs snap into place.



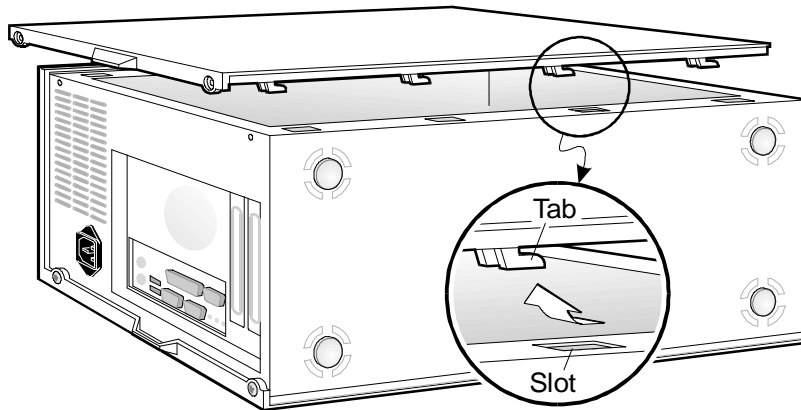


Removing the System Cover{ XE "System cover" }

The system cover is on the left side of the computer when viewing it from the front. There is also a cover on the right side of the unit, but it is not necessary to remove this.

Make sure you read the warnings on page 36.

1. Lay the unit on its right side and remove the padlock if one is being used to secure the cover.
2. Remove two retaining screws from the rear of the system cover.
3. Slide the cover toward the rear of the chassis until the front edge is free from the front panel.



4. Lift the cover straight up to remove it from the chassis.

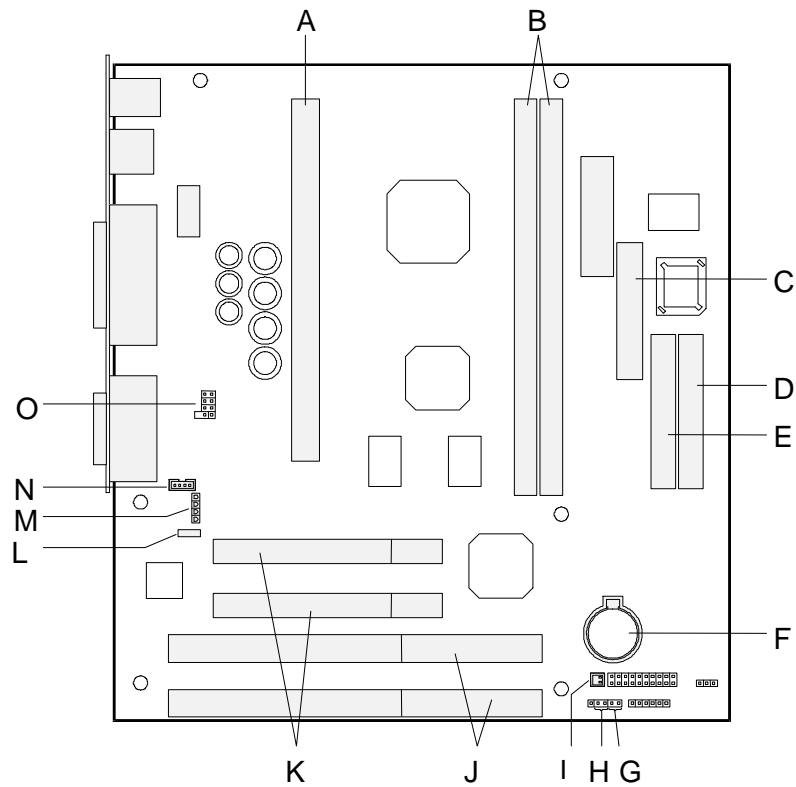
Replacing the System Cover

1. Lay the unit on its right side and make sure that all internal cables and cards are properly installed and that screws are tightened.
2. Place the cover down over the chassis so that the tabs on the cover fit into the slots on the chassis.
3. Slide the cover forward until the front edge is under the front panel and the back edge is against the rear of the chassis.
4. Reinstall and tighten the retaining screws at the rear of the cover.
5. If you're using one, replace the padlock.





Motherboard Layout{ XE "Motherboard" }{ XE "Jumpers" }{ XE "Password jumper" }{ XE "Fan connectors" }{ XE "RTC battery" }{ XE "Processor" }{ XE "Memory" }{ XE "DIMM sockets" }{ XE "IDE" }{ XE "PCI cards" }{ XE "AGP card" }{ XE "ISA cards" }{ XE "CD-ROM drive" }{ XE "Wake on LAN" }{ XE "Wake on ring" }



A	Processor	F	Real-time clock battery	K	PCI option cards
B	DIMM sockets	G	Password clear jumper	L	Wake On LAN
C	Diskette drive	H	Reset BIOS jumper	M	CD-ROM audio
D	Primary IDE	I	Wake On Ring	N	Modem audio
E	Secondary IDE	J	ISA option cards	O	Processor speed select jumper





				jumper
--	--	--	--	--------





Adding Memory{ XE "Memory" }{ XE "Adding memory" }{ XE "DIMMs" }

The memory in your computer is installed in two DIMM (dual in-line memory module) sockets, labeled DIMM 0 and 1. Depending on how the memory was installed in your computer when you bought it, you may have an empty socket for you to add more memory, or you may have to remove a module in order to increase the memory.

Each socket accepts 66MHz (or faster) unbuffered SDRAM modules with 32, 64, 128 or 256MB of memory. The DIMM modules must be gold-plated, with 144 pins and use 3.3V.

When installing memory modules, insert them in socket 0, then 1.

Removing a Memory Module

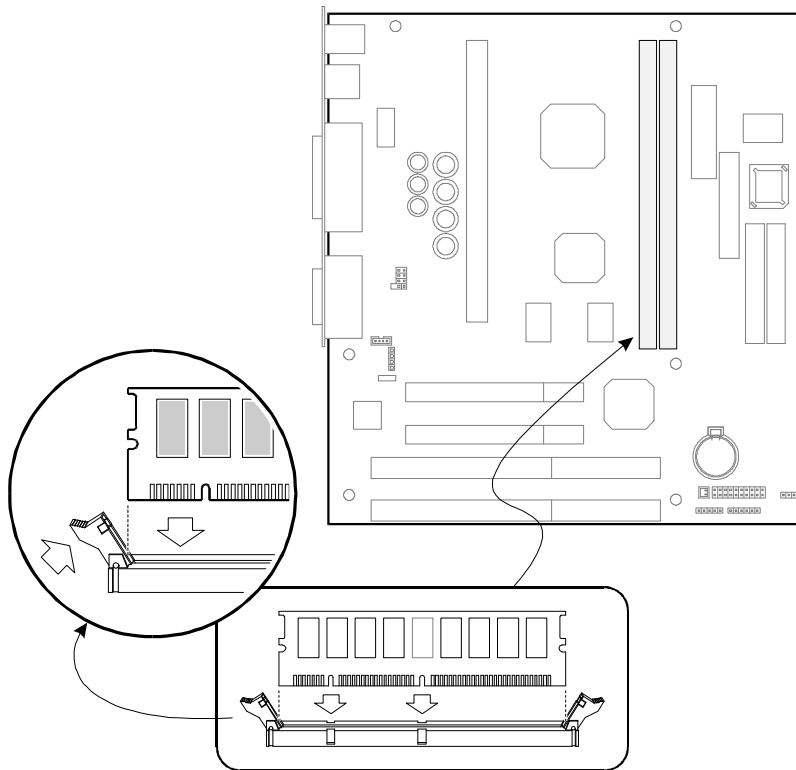
1. Follow the instructions on page 38 to remove the system cover.
2. If you unplug some of the cables that are attached to the motherboard and drives in order to get to the DIMM sockets, label the cables so that you will be able to reinstall them correctly later.
3. Gently move the retaining clip at each end of the DIMM away from the module, then, holding the module only by the edges, lift it away from the socket.
4. Store the module in an anti-static package.
5. Follow the instructions on page 38 to replace the system cover.





Installing a Memory Module

1. Follow the instructions on page 38 to remove the system cover.
2. Holding the new module only by the edges, remove it from its anti-static package.
3. Ensure that the notches in the bottom edge of the module align with the notches in the DIMM socket.
4. Insert the bottom edge of the module into the socket, making sure that it is seated firmly. When the module seats correctly, the retaining clips snap into place.



5. Reconnect any cables you had to unplug.
6. Follow the instructions on page 38 to replace the system cover.





Changing Drives{ XE "Drive bays" }{ XE "5.25\" drives" }{ XE "3.5\" drives" }{ XE "Diskette drive" }{ XE "CD-ROM drive" }{ XE "IDE:cable" }{ XE "Hard disk:cable" }{ XE "Master drive" }{ XE "Slave drive" }

There are two sets of drive bays in your computer: a set of two 5.25" drive bays and a set of three 3.5" drive bays.

Both of the 5.25" drive bays can be accessed from outside of the computer via openings in the front bezel. The upper bay (labeled A in the following diagram) contains the CD-ROM drive; the lower bay (B) is available for you to install your own drive.

The upper two 3.5" drive bays can be accessed from outside of the computer via openings in the front bezel. The upper bay (labeled C) contains the diskette drive; the middle bay (E) will contain a Zip drive if you ordered one; the lower bay (F) is not accessible from outside the computer and contains the hard disk.

You can change the installed drives or add additional drives in the empty bays. You can put an additional 3.5" drive in the empty 3.5" bay, or you can install it in one of the 5.25" bays if you mount the drive in a 5.25" drive carrier.







The diskette drive connects to the motherboard via a special FDD cable. The other drives in your computer (the hard drive, the CD-ROM drive and the optional Zip drive) connect via IDE cables.

The motherboard in your computer has two IDE connectors, called primary and secondary; each connector has an IDE data cable connected to it. At the other end of each IDE cable, there are two connectors, so that each cable can have two drives on it. For faster data transfer rates, it is better if you connect the hard drive to the primary IDE cable, and the CD-ROM drive to the secondary one. Additional drives can be connected to either of the remaining IDE drive connectors.

If you do connect two IDE devices to the same cable, you need to make sure that one is configured as an IDE master and other as an IDE slave. In general, the hard disk that contain the operating system should be the master. Slave and master usually set by jumpers on the drive, refer to the information that came with the drive for details.

Changing Drives in the 3.5" Drive Bays{ XE "Diskette drive" }

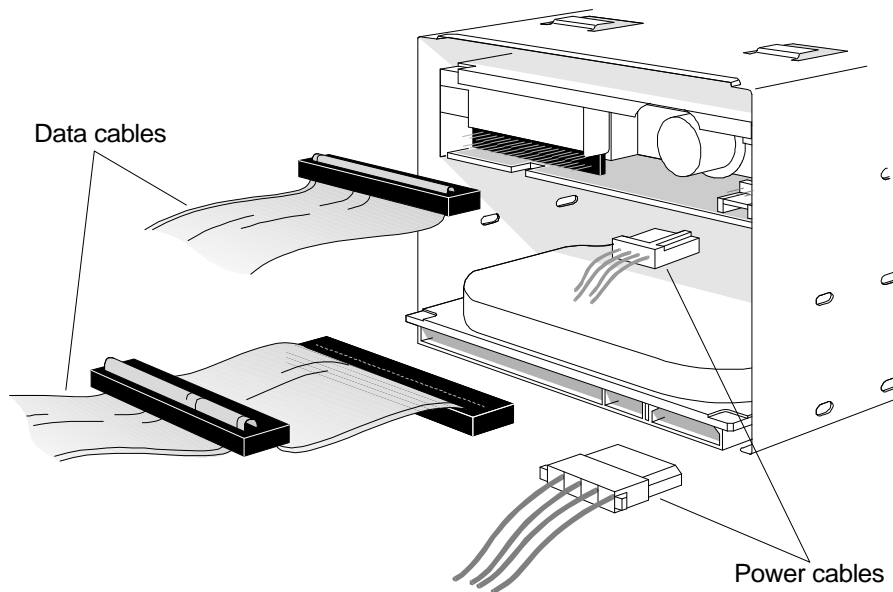
The following instructions tell you how to remove and install a diskette drive in the upper 3.5" drive bay, but you can also use them for a drive in the other two bays.

CAUTION: While performing the following procedure, be careful not to scrape the drive cables or the mounting bracket against the motherboard and any cards that are attached to it.



Removing a 3.5" Drive

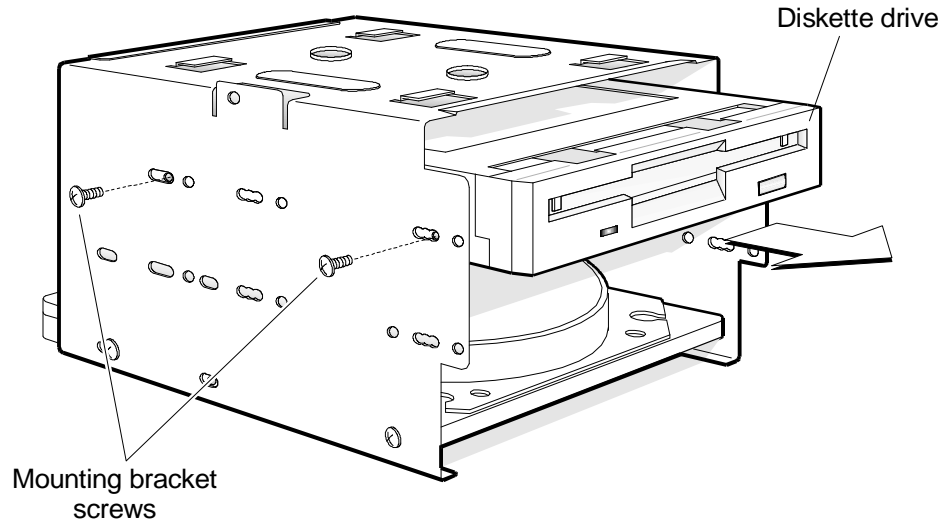
1. Follow the instructions on page 38 to remove the system cover.
2. Disconnect the power and the ribbon data cables from the drives in the 3.5" drive mounting bracket. If necessary, label the cables to assist you in reinstalling them later.



3. The 3.5" drive mounting bracket is secured inside the computer with a screw that goes into the 5.25" mounting bracket. Remove and save the screw.
4. Slide the 3.5" drive mounting bracket toward the back of the unit until it disengages from the 5.25" drive mounting bracket. Pull the mounting bracket out of the unit and lay it on one side on an anti-static surface.



5. Remove and save the two screws on each side of the bracket (total of four screws). Pull the drive out the mounting bracket.



6. Store the drive in an anti-static protective wrapper.

Installing a 3.5" Drive

1. Use the instructions in the previous section to remove the 3.5" drive mounting bracket from the computer.
2. Remove the drive from its protective wrapper and place it on an anti-static surface.
3. Set any drive jumpers or switches according to the manufacturer's instructions.
4. With the connectors on the drive to the rear, slide the drive into the front of the 3.5" mounting bracket. Line up the holes on the bracket with the screw holes on the drive.
5. Insert and tighten two screws on each side of the drive.
6. If you are installing the drive into a bay that was empty, remove the EMI filler panel on the front panel of the cabinet and the plastic bezel insert on the front bezel.
7. Align the top of the 3.5" drive mounting bracket with the bottom of the 5.25" drive mounting bracket.



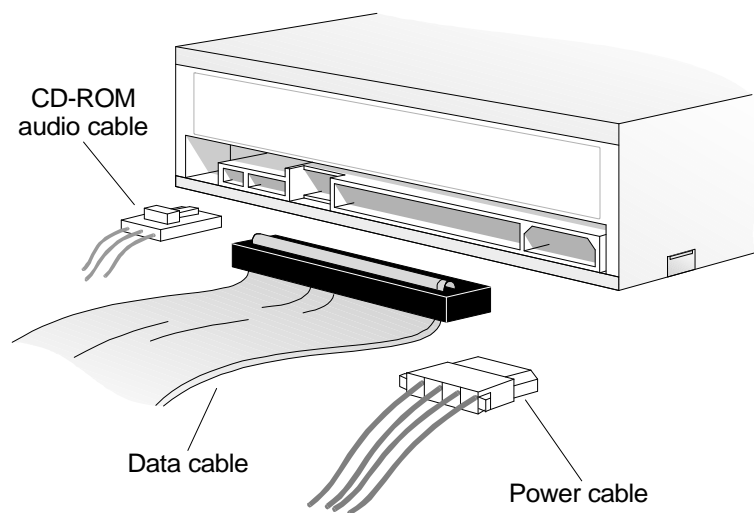
8. Slide the 3.5" drive mounting bracket toward the front of the unit. The screw hole at the top of this bracket should line up with the screw hole on the protruding flange of the 5.25" drive mounting bracket.
9. Insert and tighten the screw that attaches the 3.5" drive mounting bracket to the 5.25" drive mounting bracket.
10. Attach the power and data cables to the drives in the 3.5" drive mounting bracket.
11. Follow the instructions on page 38 to replace the system cover.

Changing Drives in the 5.25" Drive Bays

CAUTION: While performing the following procedure, be careful not to scrape the drive cables or the mounting bracket against the motherboard and any cards that are attached to it.

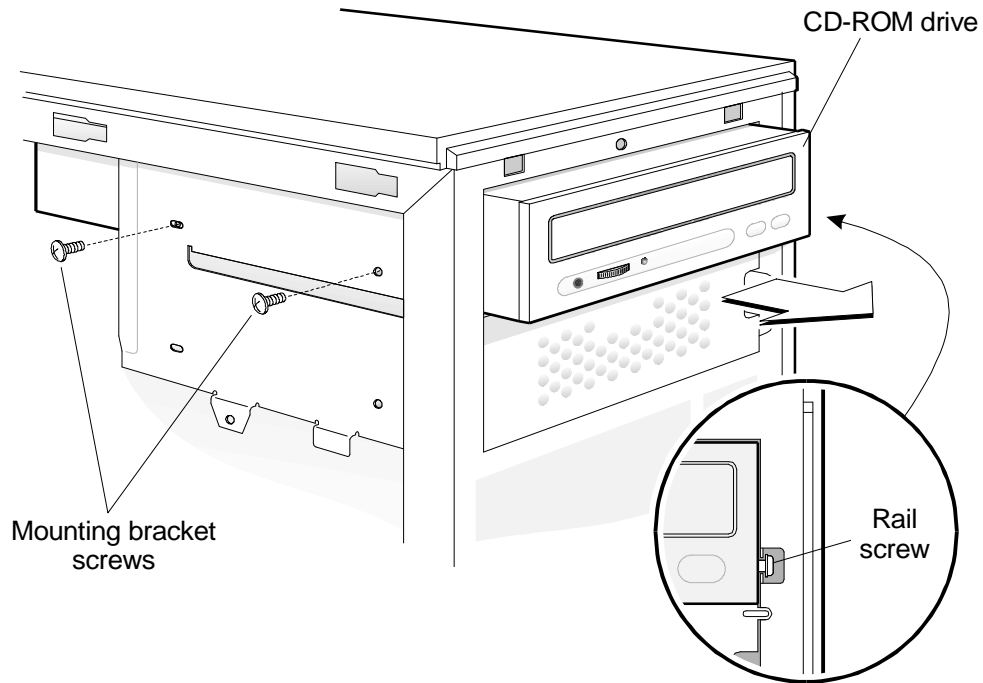
Removing a 5.25" Drive

1. Follow the instructions on page 38 to remove the system cover.
2. Disconnect the cables from the CD-ROM drive. If necessary, label the cables to assist you in reinstalling them later.





3. Remove and save the two screws that secure the CD-ROM drive to the 5.25" drive mounting bracket.

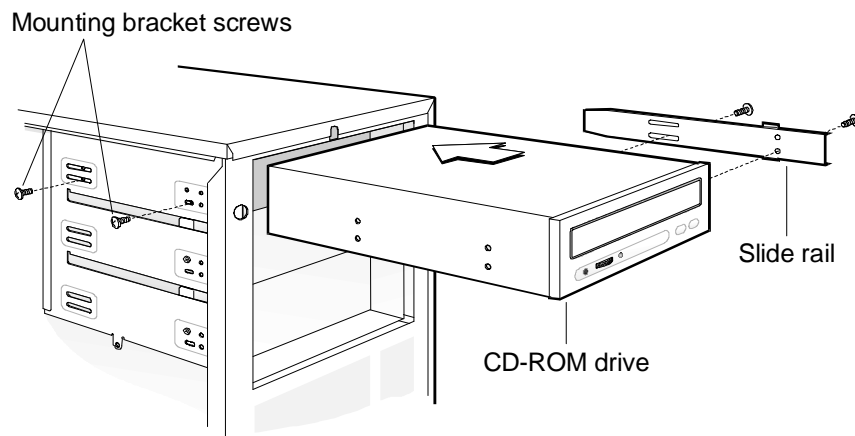


4. Slide the drive out through the front of the computer.
5. Remove and save the slide rail from the right side of the drive.
6. If the device is a 3.5" device mounted in a 5.25" carrier, remove the screws that hold the drive in place in the carrier. Slide the drive from the carrier.
7. Place the drive in an anti-static wrapper.
8. Follow the instructions on page 38 to replace the system cover.



Installing a 5.25" Drive

1. Follow the instructions on page 38 to remove the system cover.
2. Remove the drive from its protective wrapper and place it on an anti-static surface.
3. Set any drive jumpers or switches according to the manufacturer's instructions.
4. If you are installing a 3.5" drive, mount it in a 5.25" drive carrier.
5. Install a slide rail on the right side of the device (or drive carrier, if the device is mounted in a drive carrier). If you are replacing a drive, use the slide rail from the drive you removed. If you are installing a drive in a bay that was empty, use one of the slide rails included with your computer.
6. If you are installing the drive into a bay that was empty, you may need to remove the EMI filler on the front panel of the cabinet and the plastic bezel insert on the front bezel.
7. Align the slide rail with the slots in the side of the bay, then slide the drive into place. The holes on the left side of the drive should line up with the screw holes on the mounting bracket.



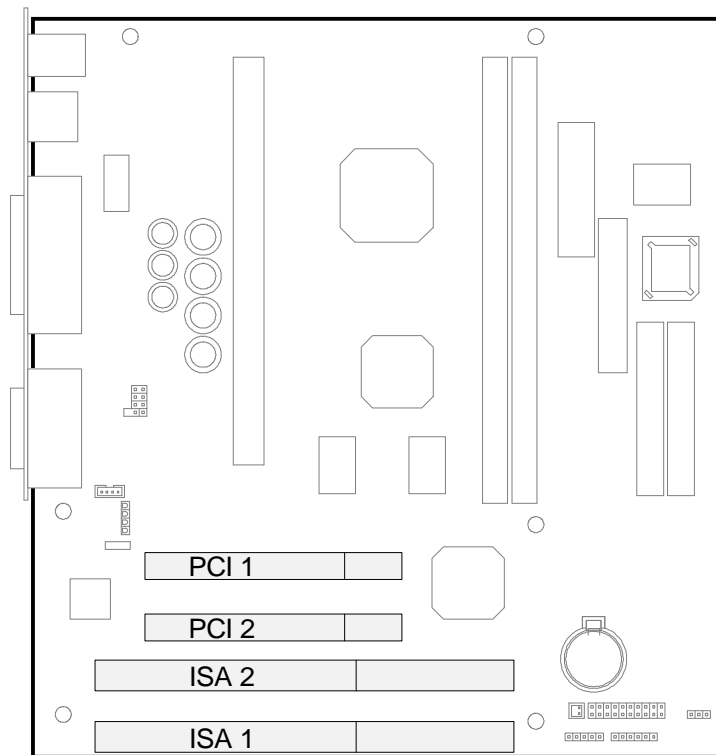
8. Insert and tighten two screws on the left side of the mounting bracket to secure the drive.
9. Attach the cables to the drives in the carrier.
10. Follow the instructions on page 38 to replace the system cover.



Changing Option Cards{ XE "Option cards" }{ XE "AGP card" }{ XE "PCI cards" }{ XE "ISA cards" }{ XE "Current" }

The motherboard in your computer has slots for two types of option cards:

- two PCI cards
- two ISA cards.



One of the PCI card connectors (PCI2) and one of the ISA card connectors (ISA2) share the same slot, so that you install either an ISA or a PCI card there.

If you ordered your computer with a network or modem card, it will be installed in one of the PCI connectors.

PCI cards are generally faster than ISA cards and can be automatically configured by the computer. ISA cards usually require you to configure the card by setting jumpers and





switches on the card itself. When you can, you should use PCI cards instead of ISA ones.

Your computer has a PCI configuration utility that automatically sets up a newly-installed PCI card to work with your computer and other PCI cards. However, if you install a new PCI card, it could conflict with the existing configuration so much that you cannot start the computer. If this happens, reset the configuration data using Setup as described below.

When you install ISA cards, you need to configure these in two ways: set jumpers or switches on the card before you install it, and use Setup to reserve resources such as interrupts and memory addresses. Refer to the ISA card manual for more details on what resources are used by the card, and refer to page 61 for more details on using Setup.

The system is designed to provide an average of 1.5A (amps) of +5 V power for each card in the system. The total +5 V current-draw in a fully loaded system (all add-in card slots filled) must not exceed 7.5A.

When a card is installed, you can access the external connectors on it via an opening in the back of the computer. When no card is installed in a slot, the opening is closed by a cover. If you remove or move a card, it is important that you use the covers to close the opening to ensure correct electromagnetic shielding and to ensure proper cooling.

Resetting PCI Configuration Data{ XE "Plug and Play O/S" }{ XE "Operating system" }{ XE "PCI configuration" }{ XE "NumLock" }

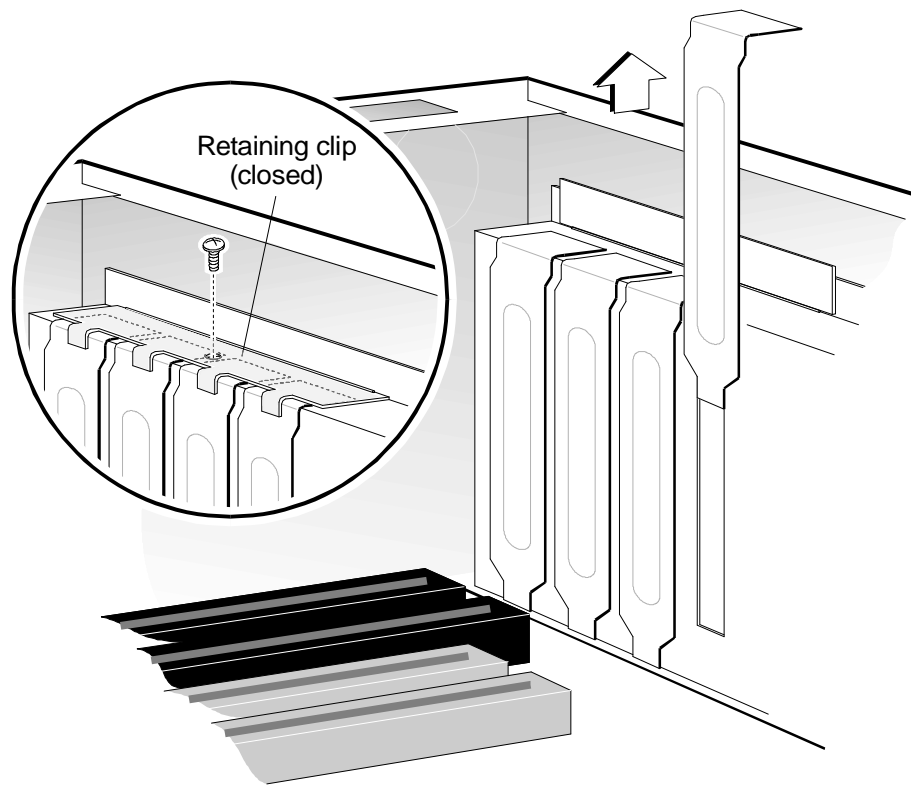
1. Remove the PCI card that is stopping the computer from starting.
2. Turn on the computer and enter Setup.
Go to the *PNP/PCI Configuration* menu and change the *Reset Configuration Data* setting to *Enabled*.
Save and exit Setup and let the computer restart.
3. Turn off the computer and install the PCI card.
4. Turn on the computer, the computer should now configure the PCI cards to work together.
5. Restart the computer and enter Setup.
Go to the *PNP/PCI Configuration* menu and change the *Reset Configuration Data* setting to *Disabled*.
Save and exit Setup and let the computer restart.





Installing an Option Card

1. Follow the instructions on page 38 to remove the system cover.
2. Remove the screw from the slot cover retaining clip and rotate the clip to the upright, open position.
3. Slide the slot cover away from the card rack and lift it out. Save the slot cover for later use.

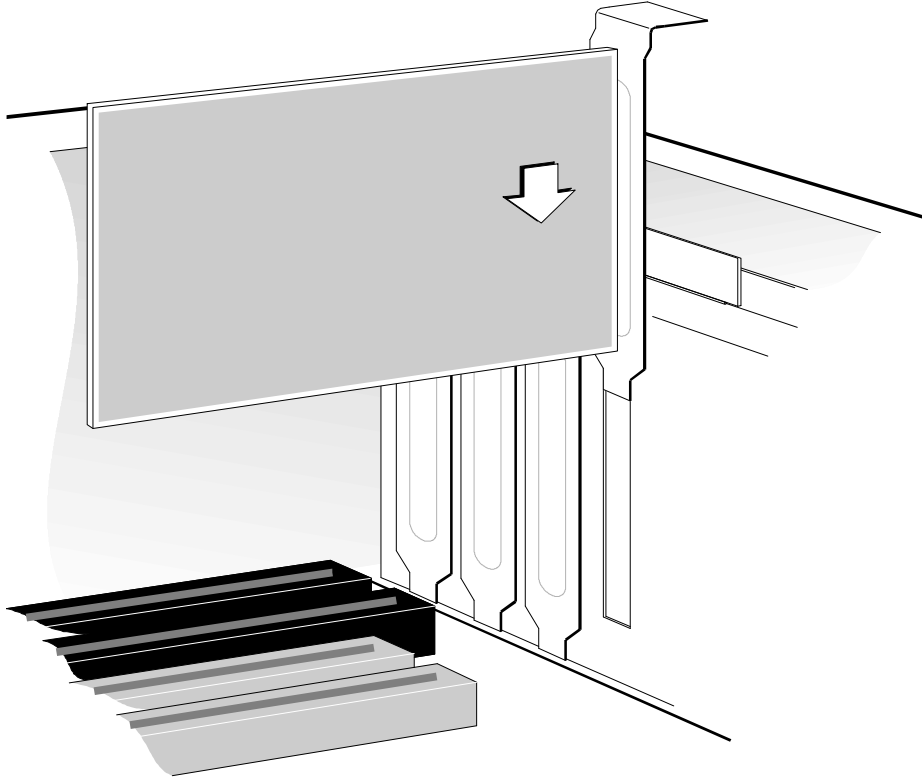


4. Remove the option card from its wrapper and place it on a grounded, static-free surface, component-side up.
5. Set any card jumpers or switches according to the manufacturer's instructions.





6. Holding the card by its top edge or upper corners, firmly press it into the connector on the motherboard.



7. Ensure that the card's connectors line up through the open slot at the back of the cabinet.
8. Rotate the slot retaining clip back down to its original position and reinstall the retaining clip screw.
9. Connect cables (if needed) to the installed card.
10. Follow the instructions on page 38 to replace the system cover.





Removing an Option Card

Option cards can be extremely sensitive to ESD (Electrostatic Discharge) and always require careful handling. Hold the card by the edges only, and do not touch the electronic components or gold edge connectors. After removing a card from its protective wrapper or from the system, place it flat on a grounded, static-free surface, component-side up. Do not slide the card across any surface.

1. Follow the instructions on page 38 to remove the system cover.
2. Disconnect any cables attached to the option card to be removed.
3. Remove the screw from the slot retaining clip and rotate the clip to the upright, open position.
4. Hold the card at each end and gently rock it back and forth until the edge connectors pull free. Be careful not to scrape the card against other components.
5. Store the card in an anti-static protective wrapper.
6. Install an expansion slot cover over the vacant slot.
7. Rotate the slot retaining clip back down to its original position and reinstall the retaining clip screw.
8. Follow the instructions on page 38 to replace the system cover.





Changing the Processor{ XE "Processor" }{ XE "CPU" }{ XE "SEP" }{ XE "SECC" }{ XE "SECC2" }

The Intel® processor in your computer is installed into a 242-contact slot connector on the motherboard. Processor modules are available in three packages:

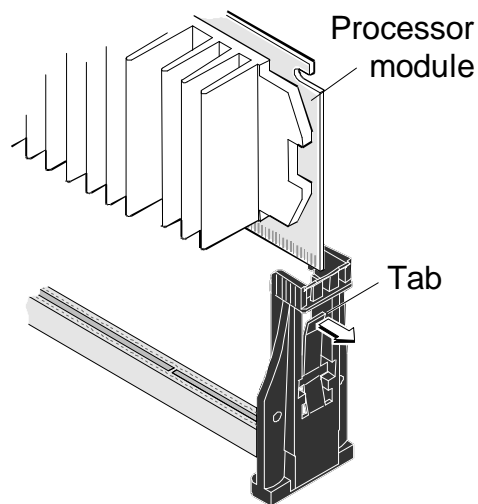
- the Single Edge Processor (S.E.P.) package
- the Single Edge Contact Cartridge (S.E.C.C.)
- the Single Edge Contact Cartridge 2 (S.E.C.C.2.).

Each module includes processor and the cache memories.

Removing the Processor

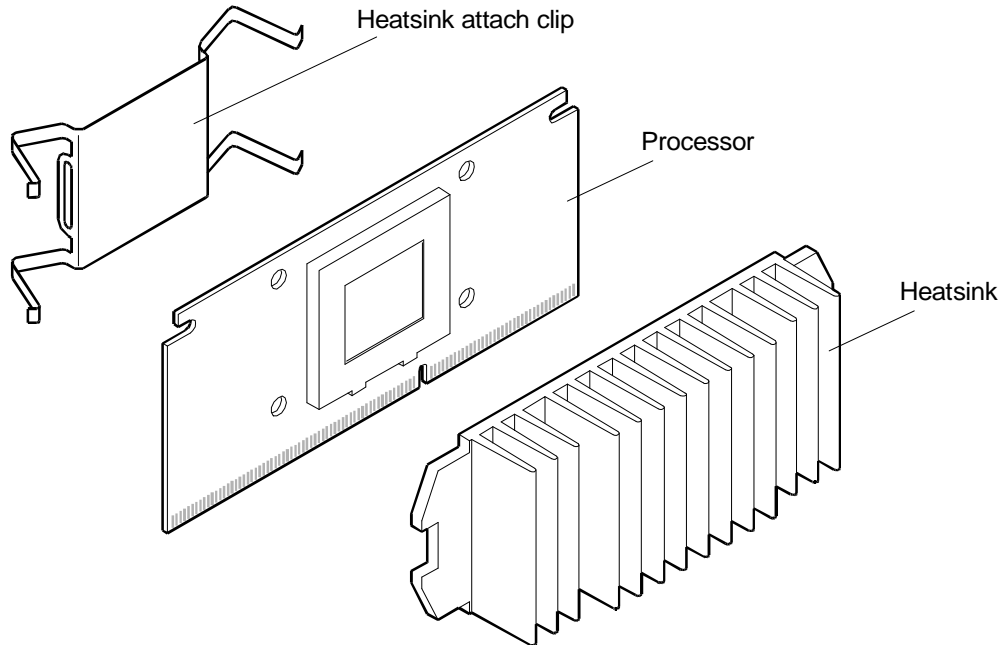
WARNING: The processor module and heatsink will be hot if the computer has been running. To avoid personal injury, wait at least 10 minutes for the module and heatsink to cool after turning off the computer.

1. Follow the instructions on page 38 to remove the system cover.
2. Remove any option cards that block access to the processor.
3. Pull back the retaining tabs from the ends of the processor socket and lift out the processor and attached heatsink.





4. Remove the heatsink clip from the bottom of the assembly. Separate the heatsink from the processor.



5. Place the processor in an anti-static package.

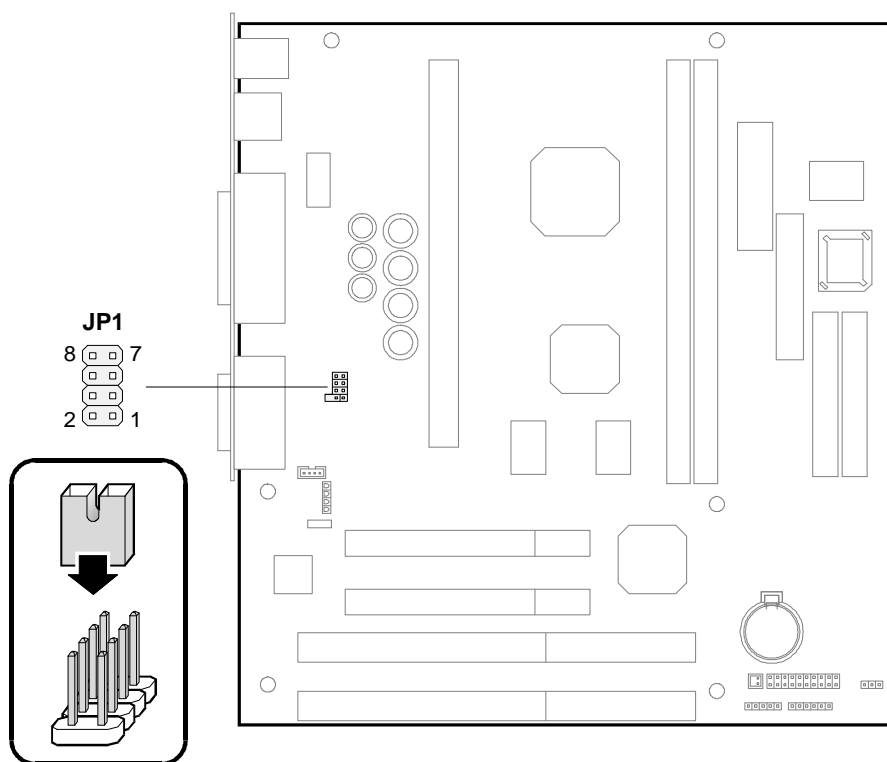
Installing a Processor

1. Remove the processor from its anti-static package; do not touch the edge connector.
2. Install the heatsink on the processor and fasten with the heatsink attach clips.
3. Insert the processor and heatsink into the motherboard socket. Be sure the retaining tabs actuate.





4. If you installing a processor of a different speed from the one that was installed, set the Processor Speed Select jumpers according to the following table: { XE "Processor speed" }



CPU Speed (MHz)	1-2	3-4	5-6	7-8
300	OFF	ON	ON	OFF
333	OFF	OFF	ON	ON
366	OFF	OFF	ON	OFF
400	ON	ON	OFF	ON

5. Follow the instructions on page 38 to replace the system cover





Replacing the RTC Battery{ XE "RTC battery" }{ XE "CMOS battery" }{ XE "Battery" }{ XE "Clock battery" }

Your computer contains a Real-Time Clock (RTC) that keeps the system time and date accurate to within 13 minutes each year. The RTC also contains memory used by Setup to store its values. The RTC is supported by a coin-cell lithium-ion battery that has an estimated lifetime of five years. When the battery reaches the end of its life, the settings in the RTC memory may be lost and the date and time may become incorrect.

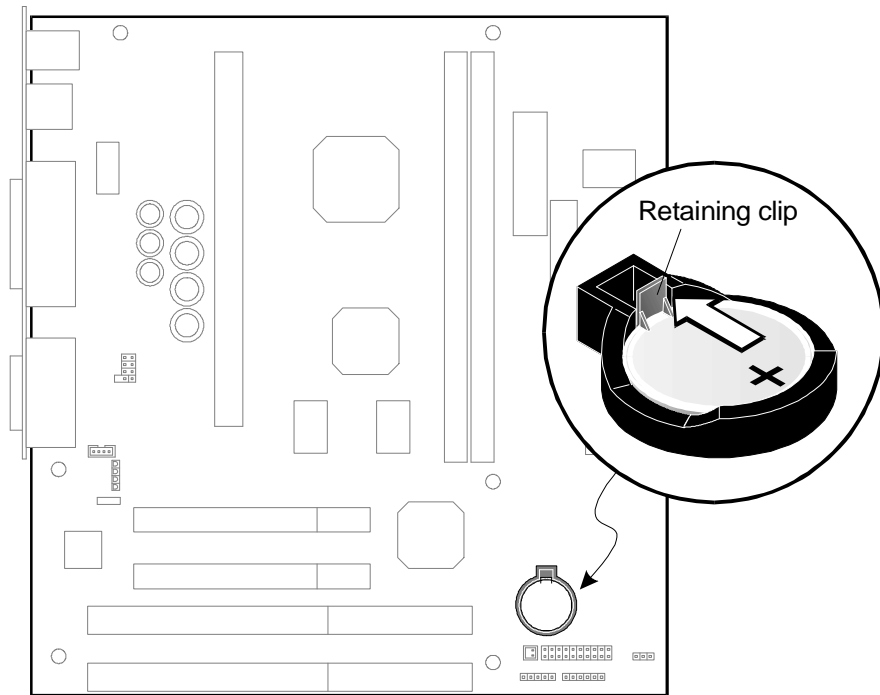
Replacing a battery with an incorrect type can cause an explosion: the replacement battery must be a Sony CR2032 battery or equivalent; this is a 3V Lithium-Ion coin cell battery.

WARNING: Do not expose batteries to excessive heat or fire. Keep all batteries away from children. Always discard used batteries according to their manufacturer's instructions.





1. Follow the instructions on page 38 to remove the system cover.
2. Press the retaining clip on the battery holder to disengage the battery.



3. Remove the battery from its socket, taking care to note the orientation of the “+” and “-” signs printed on it .
4. Position the new battery in the socket so that its “+” and “-” signs are in the same orientation as the previous battery’s.
5. Press the new battery securely into the socket.
6. Follow the instructions on page 38 to replace the system cover





Setup Program{ XE "Setup" }

Your computer has a built-in Setup program you use to change the way the computer uses its components. To start Setup, turn on the computer, then press **Delete** when the following message appears on screen:

Press Del to enter SETUP

You only have a few seconds to do this before the computer starts to load the operating system.

The first menu you see lets you access other menus with specific features, as well as save and reset the values in Setup. The keys you can use to navigate around Setup are shown on the lower part of the screen.

Main Menu

The menus you can access from the Main menu are described in the tables following this one.

Load Setup Defaults	Loads the factory default values for all the Setup options, except for the Standard CMOS Setup parameters.
User Password	Lets you to enter a system or Setup password; see page 32 for more details.
Save & Exit Setup	Saving all changes you've made in Setup and exits.
Exit Without Save	Exits Setup without saving changes.



Standard CMOS Menu{ XE "Date" }{ XE "Time" }{ XE "Master drive" }{ XE "Slave drive" }{ XE "Diskette drive" }{ XE "Error messages" }{ XE "Startup error messages" }{ XE "Video controller" }

Date	Month:day:year	Sets the system date
Time	Hours:minutes:seconds	Sets the system time in the 24-hour format.
Primary Master Primary Slave Secondary Master Secondary Slave	Auto* User None	Sets the hard disk information. <i>Auto</i> automatically configures the drives. <i>User</i> lets you enter the information Note: When <i>Auto</i> is selected, the next six features (SIZE, CYLS, HEAD, PRECOMP, LANDZ, and SECTOR) are set to zero.
CYLS	1 - 16,384	Number of cylinders. Can only be changed when the hard disk type is set to <i>User</i> .
HEAD	1 - 16	Number of read/write heads.
PRECOMP	N/A	Write precompensation. This setting is not required for IDE drives.
LANDZ	N/A	Landing zone. This setting is not required for IDE drives.
SECTOR	1 - 63	Number of sectors per track.
MODE	AUTO* NORMAL LBA LARGE	<i>AUTO</i> automatically selects which mode to use. <i>NORMAL</i> can be used for drives smaller than 514MB. <i>LBA</i> and <i>LARGE</i> can be used for drives larger than 514MB.



Drive A:	360KB, 5.25 in, 1.2MB, 5.25 in, 720KB, 3.5 in, 1.44M, 3.5 in * 2.88MB, 3.5 in , None	Sets the type of diskette drive. If your computer has an LS-120 drive instead of a diskette drive, set this to <i>None</i> .
Drive B:	360KB, 5.25 in, 1.2MB, 5.25 in, 720KB, 3.5 in, 1.44M, 3.5 in 2.88MB, 3.5 in , None *	If you install a second diskette drive, set this to the correct type.
Video	Mono, EGA/VGA * CGA 40 CGA 80	Sets the type of display used when the computer starts.
Halt On	No Errors, All Errors, All, But Keyboard * All, But Diskette, All, But Disk/Key	If an error is detected when the computer is turned on, an error message is displayed, followed by: <i>Press F1 to continue, DEL to enter Setup,</i> unless disabled.

* - default setting



BIOS Features Menu{ XE "Virus warning" }{ XE "Power on self test" }{ XE "Boot sequence" }{ XE "Diskette drive" }{ XE "NumLock" }{ XE "Typematic rate" }{ XE "System password" }{ XE "Password" }

Virus Warning	Enabled, Disabled *	When enabled, you'll see a warning message when any attempt is made to write to the boot sector or partition table of the hard disk.
Quick Power On Self Test	Enabled * Disabled	When enabled, the computer skips some diagnostics tests when it starts.
Boot Sequence	A,C,SCSI *, C,A,SCSI, C,CDROM,A, CDROM,A,C, D,A,SCSI, E,A,SCSI, F,A,SCSI, SCSI,A,C, SCSI,C,A, C only, LS/ZIP,C	The computer attempts to load the operating system from the disk drives in the selected sequence.
Swap Floppy Drive	Enabled, Disabled *	Effective only on system with two diskette drives. When enabled, physical drive B is assigned to logical drive A, and physical drive A is assigned to logical drive B.
Boot Up Floppy Seek	Enabled * Disabled	When enabled, the diskette drive is tested when the computer is turned on. Disabling this speeds up the startup process.
Boot Up NumLock Status	Off, On *	Determines state of the Num Lock key when the system boots.
Typematic Rate Setting	Enabled, Disabled *	When enabled, you can select a typematic rate and typematic delay.

Typematic Rate (Chars/Sec)	6 * 8, 10, 12, 15, 20, 24, 30	Sets the rate, in characters per second, at which a character repeats when you hold a key.
Typematic Delay (Msec)	250* 500, 750, 1000	Sets the delay, in milliseconds, before a keystroke repeats when you hold a key.
Security Option	Setup* System	This determines when a password is required: <i>System</i> means that the password must be entered before entering Setup or starting the operating system; <i>Setup</i> only requires a password to enter Setup.
PCI/VGA Palette Snoop	Enabled, Disabled *	If you install an ISA video card, you may need to enable this.
Assign IRQ For VGA	Enabled* Disabled	A VGA interrupt is required by some operating systems for video chip detection and operation. Enable this option if your operating system video is not configuring correctly.
OS Select For DRAM>64MB	Non-OS2 * OS2	Select <i>OS2</i> only if you are running the OS/2 operating system and your computer has more than 64MB memory.
Video BIOS Shadow	Enabled * Disabled	When enabled, the video BIOS is copied to a system memory area for optimal video performance. Video BIOS is shadowed in memory area C0000h-C7FFFh.
Memory Range Shadowing	Enabled Disabled *	When enabled, firmware (for example, the computer's BIOS) is copied to in a memory area for faster performance.

* - default setting

Chipset Features Menu{ XE "CPU temperature" }{ XE "Temperature" }{ XE "Shutdown temperature" }

SDRAM CAS Latency Time	2, 3 *	This feature is set at the factory based on the memory installed; do not change it.
System BIOS Cacheable	Enabled, Disabled *	When enabled, the system BIOS is cached at memory address F0000h-FFFFFh, resulting in better system performance.
Video BIOS Cacheable	Enabled, Disabled *	When enabled, the video BIOS is cached at memory address C0000h-C7FFFh, resulting in better video performance.
Video RAM Cacheable	Enabled, Disabled *	When enabled, the video RAM is cached, resulting in better system performance.
8 Bit I/O Recovery Time	1*-8	The length of time (in CPU clocks) the computer delays after the completion of an 8-bit I/O request.
16 Bit I/O Recovery Time	1*-4	The length of time (in CPU clocks) the computer delays after the completion of an 16-bit I/O request.
Memory Hole At 15M-16M	Enabled, Disabled *	If you install an ISA video card, you may need to enable this.
Passive Release	Enabled * Disabled	When enabled, processor to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to memory.
Delayed Transaction	Enabled * Disabled	When enabled, the computer complies with PCI specification version 2.1.
AGP Aperture Size (MB)	4, 8, 16, 32, 64*, 128, 256	Leave this set to 64.



Power-Up State	Stay Off * Last State, Power On	Specifies what happens if the AC power returns after failing: <i>Stay Off</i> keeps the power off until the power button is pressed. <i>Last State</i> restores the power state when the power failed. <i>Power On</i> turns the computer on.
CPU Warning Temperature	Disabled, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/158°F*	A warning alert appears if the processor reaches the specified temperature. If you install an different processor, check its specifications to see what its maximum temperature is.
Shutdown Temperature	60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F *	The computer automatically shuts down when the processor temperature reaches the specified temperature.

* - default setting



Power Management Menu{ XE "Power management" }{ XE "Hard disk:timeout" }{ XE "Monitor:power management" }{ XE "ACPI" }{ XE "Wake on ring" }{ XE "Wake on LAN" }{ XE "Doze mode" }{ XE "Standby mode" }{ XE "Suspend mode" }

ACPI function	Enabled, Disabled *	Enable this if you are using an operating system like Windows 98 that supports ACPI. Disable this for one that doesn't, like Windows NT 4.
Power Management	Disable, Min Saving * User Define, Max Saving	When disabled, all power management features are disabled. <i>Max</i> and <i>Min Saving</i> uses pre-defined values. <i>User Define</i> lets you set your own values.
PM Control by APM	Yes * No	When set to <i>Yes</i> , the computer's power management features are controlled by the operating system. When set to <i>No</i> , the computer controls power management.
Video Off Method	Blank Screen, V/H SYNC+ Blank * DPMS	When set to <i>Blank Screen</i> , the monitor screen is only blacked. When set to <i>V/H SYNC+Blank</i> , the system also turns off the V-SYNC and H-SYNC signals. <i>DPMS</i> turns off monitors that support the mode.
Video Off After	Suspend, Standby * Doze	The power-saving mode in which you want the system to blank the screen.
Modem Wake Up Use IRQ	Auto, 3*, 4, 5, 7, 9, 10, 11	The interrupt used by the modem, if one is installed. If no modem is installed, set this to <i>Auto</i> .



Doze Mode Standby Mode Suspend Mode	Disable * 1, 2, 4, 6, 8, 10, 20, 30, 40 min 1 hour	Time of inactivity required to enter the next power saving mode. See page 24 for a full description of power management modes.
HDD Power Down	Disable * 1 – 15* min	Time without any disk access before the hard drive goes into standby mode.
Throttle Duty Cycle	12.5, 25, 37.5, 50, 62.5*, 75	When the system enters Doze mode, the processor only runs for the percentage of time set here.
PCI/VGA Active Monitor	Enabled, Disabled*	When enabled, any activity on the monitor will stop power management.
Soft-Off by PWR-BTTN	Delay 4 Sec, Instant-Off*	Specifies what happens when you press the power button on the front panel; <i>Delay</i> enables Suspend mode; see page 22 for more details.
Power On From Ring	Enabled, Disabled *	When enabled, an incoming call to the modem wakes the computer up.
Power On From LAN (WOL)	Enabled Disabled *	When enabled, the computer wakes in response to a Wake On LAN call to an installed network card.
Power On From Alarm	Enabled, Disabled*	When enabled, you can set a time and date when your computer will wake up.
Reload Global Timer Events	Enabled, Disabled	Any activity on an enabled device will stop the computer using power management. IRQ 3-7, 9-15, NMI, Primary IDE 0, Primary IDE 1, Secondary IDE 0, Secondary IDE 1, Floppy Disk, Serial Port, Parallel Port

* - default setting



PNP/PCI Configuration Menu{ XE "Plug and Play O/S" }{ XE "Operating system" }{ XE "PCI configuration" }{ XE "IRQ assignment" }{ XE "DMA assignment" }

PNP OS Installed	No* Yes	Specifies whether a Plug and Play operating system is being used; if you are using Windows 98, set this to <i>Yes</i> , if you are using Windows NT, set this to <i>No</i> .
Resources Controlled By	Auto * Manual	When set to <i>Auto</i> , the computer automatically handles all interrupt request (IRQ) and DMA assignments. When set to <i>Manual</i> , you can assign these manually.
IRQ # Assigned To	Legacy ISA PCI/ISA PnP*	When assigning resources manually, assign each IRQ to either a legacy ISA card or a PnP PCI card.
DMA # Assigned To	Legacy ISA, PCI/ISA PnP*	When assigning resources manually, assign each DMA to either a legacy ISA card or a PnP PCI card.
Reset Configuration Data	Enabled, Disabled *	If you install a PCI option card, and the system will not start correctly, set this to <i>Enabled</i> to reset the card configuration data to its factory default settings.
PCI IDE IRQ Map To	ISA, PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, PCI-AUTO *	Unless you install an IDE hard disk controller, leave this set to <i>PCI-AUTO</i> .

* - default setting



Integrated Peripherals Menu{ XE "Serial port" }{ XE "COM1" }{ XE "COM2" }{ XE "I/O address" }{ XE "Interrupts" }{ XE "Parallel port" }{ XE "Printer port" }{ XE "See Parallel port" }{ XE "Bi-directional" }{ XE "ECP" }{ XE "EPP" }{ XE "Audio" }{ XE "PIO mode" }{ XE "Hard disk" }{ XE "IDE:controller" }{ XE "Hard disk:controller" }{ XE "USB keyboard" }{ XE "Diskette controller" }{ XE "Boot display" }{ XE "Audio controller" }

IDE HDD Block Mode	Enabled * Disabled	When enabled, the computer automatically uses the optimal number of block read/writes per sector for your hard drive.
IDE Primary/Secondary Master/Slave PIO	0-4, Auto *	Sets the PIO mode used by the drives.
IDE Primary/Secondary Master/Slave UDMA	Auto * Disabled	When set to Auto, your computer supports UltraDMA/33 high speed accesses to the drives.
On-Chip Primary/Secondary PCI IDE	Enabled * Disabled	You can use this to disable one or both of the built-in IDE drive channels.
USB Keyboard Support	Enabled, Disabled *	Enable this to use a USB keyboard in Setup.
Init Display First	AGP * PCI Slot	Select AGP to use the built-in video controller as the one used when the computer is turned on.
Onboard FDC Controller	Enabled * Disabled	Enables or disables the built-in diskette drive controller.



Onboard Serial Port 1/2	Disabled, 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3 Auto	Sets the memory addresses and interrupts used by the serial ports.
UART Mode Select	Normal* IrDA, ASKIR	Leave this set to <i>Normal</i>
Onboard Parallel Port	Disabled, 3BC/IRQ7, 378/IRQ7 * 278/IRQ5	Sets the memory address and interrupt used by the parallel port.
Parallel Port Mode	SPP, EPP * ECP, ECP+EPP	Sets the mode used by the built-in parallel port; see page 31 for more details on the modes.
ESS Solo-1 Audio Chip	Enabled * Disabled	You can use this to disable the built-in audio controller.

* - default setting



Troubleshooting and Error Codes{ XE "Troubleshooting" }{ XE "Error codes" }{ XE "Beep codes" }{ XE "Startup error messages" }

When you turn on your computer, before starting the operating system, it goes through series of Power-On Self-Tests (POST). If any problems are found, the computer displays an error message telling you about them.

If the computer finds a problem with the video controller, and cannot display any error messages, you'll hear a single long beep followed by two short ones. Any other combination of beeps indicates a problem with memory

If no problems are found, the computer makes a single beep before starting to load the operating system.

Start-Up Error Messages{xe "BIOS:error messages"}

Error Message	Explanation
BIOS ROM checksum error - System halted	The checksum of the BIOS code is incorrect, indicating the BIOS code may have become corrupt. Contact your system dealer to replace the BIOS.
CMOS battery failed	The RTC battery is no longer functional; use the instructions on page 59 to replace the battery.
CMOS checksum error - Defaults loaded	Checksum of CMOS is incorrect, so the system loads the default equipment configuration. This can be caused by a weak RTC battery; use the instructions on page 59 to replace the battery.
Floppy disk(s) fail	Cannot find or initialize the diskette drive controller or the drive. Make sure the drive is installed correctly. If no drive is installed, make sure the Diskette Drive selection in Setup is set to NONE or AUTO.
HARD DISK initializing Please wait a moment...	Some hard drives require extra time to initialize.





Error Message	Explanation
HARD DISK INSTALL FAILURE	Cannot find or initialize the hard drive controller or the drive. Make sure the drive is installed correctly. If no hard drive is installed, make sure the Hard Drive selection in Setup is set to NONE.
Hard disk(s) diagnosis fail	The system may run specific disk diagnostic routines. This message appears if one or more hard disks returns an error when the diagnostics run.
Keyboard error or no keyboard present	Cannot initialize the keyboard. Make sure the keyboard is connected and no keys are being pressed. To start the computer without a keyboard attached, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD.
Keyboard is locked out - Unlock the key	This message usually indicates that you have pressed one or more keys during the keyboard tests. Be sure no objects are resting on the keyboard.
Memory test fail	Additional information on the type and location of the memory error is displayed.
Override enabled - Defaults loaded	If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration with a set of BIOS defaults designed for the most stable, minimal-performance system operations.
Press TAB to show POST screen	Press the Tab key to switch to the default POST display.
Primary master hard disk fail	POST detected an error in the primary master IDE hard drive.
Primary slave hard disk fail	POST detected an error in the primary slave IDE hard drive.
Secondary master hard disk fail	POST detected an error in the secondary master IDE hard drive.
Secondary slave hard disk fail	POST detected an error in the secondary slave IDE hard drive
System timer error	The timer test failed.





Modem AT Commands{ XE "Modem AT commands" }{ XE "AT commands" }

All AT commands must begin with AT and end with you pressing **Enter**. The commands can be in either lower- or upper-case but not mixed.

Basic AT Commands

A/	Re-execute command	I0 or I3	Report firmware revision, model and interface type
A	Answer a call	I1	Compute and report checksum
B0	Select v.22 (CCITT) mode at 1200bps	I2	Compute and compare checksum
B1	Select Bell 212A mode at 1200bps	L0	Sets lowest speaker volume
Dn	Dial <i>n</i> when <i>n</i> is 0 – 9, # or *	L1	Sets low speaker volume*
DL	Last number redial	L2	Sets medium speaker volume
DP	Pulse dialing	L3	Sets high speaker volume
DT	Touch tone dialing*	M0	Turns speaker off
DW	Wait for a second dial tone	M1	Turns speaker on during handshaking, off afterwards*
D,	pause	M2	Turns speaker on during handshaking and receiving carrier, off afterwards
D@	Wait for 5 seconds of silence	M3	Turn speaker off during handshaking and receiving carrier, on afterwards
D!	flash	N0	Turn automode detection off
D;	Return to Command Mode after dialing	N1	Turn automode detection on*
D\$	Bong tone detection (for credit card calls)	O0	Go on-line
DS= <i>n</i>	Dial one of four stored telephone numbers (<i>n</i> = 0 – 3)	O1	Go on-line and initiate training
E0	Turn off command echo	P	Force pulse dialing
E1	Turn on command echo*	Q0	Modem sends responses*
H0	Hang up	Q1	Modem does not send responses
H1	Enter command mode	S? <i>r</i>	Display the value of register <i>n</i>
Sr= <i>n</i>	Set the value of register <i>r</i> to <i>n</i>	X0	Report basic call progress result codes (OK, CONNECT, RING, NO





			CARRIER, NO ANSWER and ERROR)
T	Force tone dialing*	X1	Report basic call progress result codes and connection rate (OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT xxx and ERROR)
V0	Numeric responses	X2	Report basic call progress result codes and connection rates(OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT xxx, No DIAL TONE and ERROR)
V1	Word responses*	X3	Report basic call progress result codes and connection rates(OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT xxx, BUSY and ERROR)
W0	Report DTE speed)	X4	Report all call progress result codes (OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT xxx, BUSY, No DIAL TONE and ERROR)*
W1	Report line speed, EC protocol and DTE speed	Y0	Modem does not send or respond to break signals.
W2	Report DTE speed in EC mode	Z0	Restore stored profile 0 after warm reset

* - default setting





Extended AT Commands

&C0	Force Carrier Detect signal high*	&K4	Enable XON/XOFF DTE/DCE flow control
&C1	Turn on CD when remote carrier is present	&M0	Select direct asynchronous mode
&D0	Ignore the DTR signal*	&S0	DSR is always active*
&D1	Return to Command Mode after DTR toggle	&S1	DSR off in Command Mode, on in on-line mode
&D2	Hang up and return to Command Mode after DTR toggle	&T0	Terminate any test in progress
&D3	Reset modem after DTR toggle	&T1	Initiate local analog loopback test
&Fn	Restore factory configuration <i>n</i>	&T3	Initiate local digital loopback test
&G0	Disable guard tone*	&V	Display current configurations
&G1	Enable 550Hz guard tone	&W0	Store the active profile in NVRAM profile 0
&G2	Enable 1800Hz guard tone	&Y0	Recall stored profile 0 on power up*
&K0	Disable DTE/DCE flow control	&Z <i>n</i> = <i>x</i>	Store dial string <i>x</i> (to 34) in location <i>n</i> (0 to 3)
&K3	Enable RTS/CTS DTE/DCE flow control*		

* - default setting

MNP, v.42 and v.42bis AT Commands

%C0	Disables data compression	\N0	Normal speed buffered mode
%C1	Enable MNP5 data compression	\N1	Direct data link mode
&Q0	Same as \N0	\N2	v.42 or MNP mode only
&Q5	Same as \N3	\N3	v.42, MNP or normal mode only*
&Q6	Same as \N0	\N4	v.42 mode only
		\N5	MNP mode only

* - default setting





Fax Class 1 Commands{xe "Fax commands"}

+FCLASS= <i>n</i>	Service class	+FTH= <i>n</i>	Transmit data with HDLC framing
+FRH= <i>n</i>	Receive data with HDLC framing	+FTM= <i>n</i>	Transmit data
+FRM= <i>n</i>	Receive data	+FTS= <i>n</i>	Stop transmission and wait
+FRS= <i>n</i>	Receive silence		





Specifications{ XE "Specifications" }

Dimensions{ XE "Dimensions" }

H x D x W 17" x 14.6" x 7.1" (434 x 372 x 181mm)

Weight typical: 20lbs (9kg), maximum: 23lbs (10kg)

Power Supply{ XE "Power supply" }{ XE "Voltage" }{ XE "AC voltage" }

145W power supply, switchable voltage:

- 115VAC (100 to 127VAC): 47 to 63Hz, 3A
- 230VAC (200 to 240VAC): 47 to 63Hz, 2A

Environment{ XE "Temperature" }{ XE "Humidity" }{ XE "Altitude" }

	Operating	Non-operating
Temperature	0 to 35°C (32 to 95°F)	-10 to 60°C (-4 to 140°F)
Humidity	20 to 80% (non-condensing)	10 to 90% (non-condensing)
Altitude	0 to 10,000 feet (0 to 3,000m)	-200 to 30,000 feet (-60 to 9090m)

Processor Module{ XE "Processor" }{ XE "CPU" }{ XE "Cache memory" }{ XE "L1 cache" }{ XE "L2 cache" }

The processor module is installed into a 242-contact slot connector on the motherboard. Modules are available in three packages:

- Single Edge Processor (S.E.P.) package
- Single Edge Contact Cartridge (S.E.C.C.)
- Single Edge Contact Cartridge 2 (S.E.C.C.2.).

Modules with the Intel® Celeron® processor contain 32KB of on-chip Level 1 cache memory and 128KB of on-die Level 2 cache memory.

Architecture{ XE "System controller" }{ XE "AGP" }

The processor module connects to the chipset that controls the rest of the computer via a 66MHz system, or front-side bus. The Intel® 440LX chipset includes the system controller, and interfaces to the AGP 2x video and the PCI expansion buses.



**Memory{ XE "Memory" }{ XE "DIMMs" }**

Two DIMM sockets that accept 66MHz unbuffered SDRAM modules with 32, 64, 128 or 256MB of memory. The DIMM modules must be gold-plated, with 144 pins and use 3.3V.

Diskette Drive{ XE "Diskette drive" }

1.44MB, 3.5" diskette drive accepts DD (720KB) or HD (1.44MB) diskettes

Hard disk{ XE "Hard disk" }{ XE "S.M.A.R.T." }

UltraDMA/33 drives with S.M.A.R.T. technology to predict drive failure

- 4.3, 8.6 and 10.2GB: 5400 rpm

CD-ROM Drive{ XE "CD-ROM drive" }

40x (max.) CD-ROM drive with ATAPI interface, supports audio CD, CD multisession, CD-i, Photo CD, enhanced CD, CD-R and CDR-W, supports bootable CDs

Video{ XE "AGP card" }{ XE "Video card" }{ XE "Video memory" }

ATi 3D Rage Pro Turbo with 4MB SGRAM

Audio

ESS Solo-1™ 3D enhanced stereo audio controller

Integrated Ports{ XE "PS/2 port" }{ XE "Connectors" }{ XE "Audio connectors" }{ XE "Keyboard port" }{ XE "Mouse port" }{ XE "Game port" }{ XE "MIDI port" }{ XE "Serial port" }{ XE "Parallel port" }{ XE "Printer port" }{ XE "USB ports" }{ XE "Video port" }

Audio: Stereo line in, Stereo line out, Microphone in

Keyboard: PS/2 compatible connector

MIDI/Game Port: supports joysticks and MIDI devices (when MIDI software is installed)

Mouse: PS/2 compatible connector

Parallel: 25-pin, female D-shell connector, multimode parallel interface, supports output-only, bi-directional, ECP and EPP modes

Serial: two 9-pin, mini-DIN connector, high-speed 16550 compatible RS232C

USB: two connectors for USB devices

Video: 15-pin, female D-shell, VGA connector for fixed-frequency or multi-frequency monitor; low power standby mode for ENERGYSTAR monitors





Expansion Buses{ XE "PCI cards" }{ XE "ISA cards" }{ XE "Option cards" }

PCI: two slots (one shared with ISA)

ISA: two slots (one shared with PCI)

Modem (option){ XE "Modem" }{ XE "v.90 modem" }{ XE "videophone" }{ XE "DSVD" }{ XE "Fax" }{ XE "56k modem" }

PCI WinModem card supporting line speeds up to 56kbps (download) and 33kbps (upload) with error correction and data compression:

- ITU-T v.90, v.34+, v.34, v.32bis, v.32, v.29, v.27ter, v.23, v.22bis, v.22, v.17 data transmission; Bell 212A and 103 modes
- ITU-T v.80 videophone
- ITU-T v.70 DSVD
- ITU-T v.42 LAPM and MNP2, 3 and 4 error correction
- ITU-T v.42bis and MNP5 data compression
- Fax send and receive using ITU-T v.17 (14,400bps), v.29 (9600/2400bps), v.27ter (4800/2400bps) and v.21 channel 2 (300bps) protocols, and the EIA 578 Class 1 AT command set.

Network Card (option){xe "Network card"}{xe "Ethernet card"}{ XE "LAN:card" }

PCI card: SMC EZ Card SMC1211TX 10/100BaseT Fast Ethernet with Wake on LAN support

Zip Drive{ XE "Zip drive" } (option)

Zip drive accepts 100MB Zip disks





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Regulatory Notices

FCC Emission Notices For Users in the USA

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of FCC Rules. These rules are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to correct the interference with one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits.

Caution: unauthorized changes or modifications may void the user's right to operate the equipment. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Emission Notices For Users in Canada

This Class B digital apparatus meet' all of the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet Appareil numerique de la class B respecte toutes les exigences du reglement sur le materiel brouilleur do Canada.





Part 68 Notices

This equipment complies with Part 68 of the FCC rules.

FCC Registration Number: DK4DF1156IVA2
Ringer Equivalence Number (REN): 0.4

If requested, this REN must be given to your telephone company. The REN is used to determine the quantity of devices you may connect to your telephone line and still have those devices ring when your number is called. In most, but not all areas, the sum of all RENs of all devices should not be more than five (5.0). To be certain of the number of devices you may connect to your line, as determined by the total number of RENs, you should call your local telephone company to determine the maximum number of RENs for your calling area.

If the telephone company suspects a problem with your telephone line is related to an add-on electronic device, such as your modem, they have the right to temporarily suspend your service. It is your responsibility to remove from the telephone line any malfunctioning electronic communications equipment to avoid damage to the telephone system.

If your equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you first. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC. Your telephone company may make changes to its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

If you experience trouble with this telephone equipment, please contact your place of purchase for information for obtaining service or repairs.





Laser Compliance Statement

The CD-ROM drive used in the computer is a laser product. The CD-ROM drive's classification label is located on top of the drive.

CLASS I LASER PRODUCT
LASER KLASSE I
LUOKAN I LASERLAITE
APPARER A LASER DE CLASSE 1
KLASS I LASER APPARAI

The CD-ROM drive is certified in the US to conform to the requirements of the Department of Health and Human Services 21 Code of Federal Regulations (DHHS 21 CFR) Subchapter 3 for Class 1 laser products.

In other countries, the drive is certified to meet the requirements of EN60825.

Caution: Do not open the drive; no user adjustments or serviceable parts are inside. Use of the controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.

Class 1 laser products are not considered hazardous. The CD-ROM drive has an internal, Class 1 (1), 0.5 milliwatt, aluminum-gallium-arsenide laser that operates at a wavelength of 760 to 810 nanometers. The design of the laser system and the CD-ROM drive ensures that there is no exposure to laser radiation above a Class 1 (1) laser during normal operation, user maintenance or servicing conditions.

Declaration of the Manufacturer or Importer

We hereby certify that this product is in compliance with EU Directive 89/336/EEC, using the EMC standards EN55022B.

Product Safety Compliance

This equipment meets or exceeds requirements for safety in the US (UL 1950), Canada (CSA C22.2 No. 950-95), and Europe (TUV to EN60950).





